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The Viability and Sustainability of a Trivial Attribute Differentiation Strategy

Charan Kamal Bagga
The University of Western Ontario

Supervisor
Niraj Dawar
The University of Western Ontario

Graduate Program in Business

A thesis submitted in partial fulfillment of the requirements for the degree in Doctor of Philosophy

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THE VIABILITY AND SUSTAINABILITY OF A TRIVIAL ATTRIBUTE
DIFFERENTIATION STRATEGY

(Thesis format: Monograph)

by

Charan K. Bagga

Graduate Program in Business Administration

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy

The School of Graduate and Postdoctoral Studies
Western University
London, Ontario, Canada

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Abstract

My dissertation examines whether, when and why the competitive advantage provided by a trivial attribute (i.e., a product attribute that provides no verifiable objective benefit) to a differentiating brand holds in the event of competitive retaliation. I construct a multitude of experimental action-reaction settings to examine the sustainability of a trivial attribute differentiation strategy. The manipulated factors across different experiments include the category dominance of the first-mover and the retaliating brands, and the nature of competitive retaliation (i.e., same trivial attribute, a different trivial attribute, a more attractive trivial attribute, and price retaliation). My dissertation contributes theoretically to the areas of differentiation and consumer preference formation, and provides insight on how competitive dynamics play in consumers’ cognitive representations of the market place. The dissertation contributes managerially by providing actionable implications for firms on how to deploy, or react to trivial attribute differentiation in a competitive product market.

Keywords: Trivial attributes, Competitive Advantage, Differentiation, Experiments
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Chapter 1

1. Introduction

Product differentiation is defined as a strategy of distinguishing a product from its competition by providing superior customer value (Kotler et al. 2011). A trivial attribute differentiation strategy challenges conventional marketing wisdom that effective differentiation should generate objective value. Meaningful differentiation can indeed be created by trivial product attributes that provide no performance benefit to consumers (Broniarczyk and Gershoff 2003; Brown and Carpenter 2000; Carpenter, Glazer, and Nakamoto 1994; Simonson, Nowlis, and Simonson 1993; Xu and Wyer 2010). A trivial attribute positively influences preferences for differentiating brands and this positive effect persists even when the trivial attribute’s irrelevance is disclosed (Broniarczyk and Gershoff 2003; Carpenter, Glazer, and Nakamoto 1994). Further, under certain conditions, a trivial attribute has greater influence on consumer decision making than important attributes such as price (van Osselaer, Alba, and Manchanda 2004).

Differentiation becomes more valuable the longer it is sustained. Missing from prior work on trivial attribute differentiation is an understanding of whether such differentiation is sustainable in the event of competitive retaliation. I define sustainability of trivial attribute differentiation as the ability of trivial attributes to provide durable competitive advantage to differentiating brands that does not reverse when competing brands retaliate with trivial or important attributes. For the purpose of my dissertation, I conceptualize competitive advantage as the increase in choice share of first-mover brands that launch trivial attributes.

Understanding sustained competitive advantage in the context of trivial attributes is crucial, as competitors can and often will retaliate against first-mover trivial attribute
differentiators. This is expected as trivial attributes are relatively easy to create and deploy. Understanding the conditions under which trivial attribute differentiation is sustainable, the cognitive mechanisms that explain such sustainability and the optimal competitive response to trivial attribute differentiation form the central questions addressed by my dissertation.

Before developing a framework to study the sustainability of trivial attribute differentiation, it is important to close current gaps in the literature on the viability of trivial attribute differentiation. I define viability of trivial attribute differentiation as the ability of trivial attributes to provide competitive advantage to differentiating brands over brands that do not have trivial attributes. Prior research shows that trivial attribute differentiation is indeed viable in many circumstances (Broniarczyk and Gershoff 2003; Brown and Carpenter 2000; Carpenter, Glazer, and Nakamoto 1994; Xu and Wyer 2010). However, I argue that important questions on the viability of trivial attribute differentiation have not been addressed. To that end, I develop hypotheses on the moderating effects of (a) a differentiating brand’s dominance and (b) category complexity on the differentiating brand’s choice and evaluation.

My dissertation is structured as follows. In chapter 2, I introduce the relevant literatures on trivial attributes and competition, and discuss my dissertation’s objectives. In chapter 3, I develop hypotheses that address previously unexamined questions on the viability of trivial attribute differentiation.

In chapters 4 to 7, I expand my conceptual framework to examine when and why the competitive advantage provided by trivial attribute differentiation sustains. Specifically, I construct a multitude of action-reaction settings to examine the sustainability of a trivial attribute differentiation strategy. The factors I examine in my framework include the category dominance of the first-mover and the retaliating brands, and the nature of competitive retaliation. I
investigate four types of competitive retaliation, (a) same trivial attribute, (b) different [equally attractive] trivial attribute, (c) different [more attractive] trivial attribute and (d) price cut. I also develop hypotheses on consumers’ cognitive choice strategies that underlie the proposed sustainability hypotheses.

In chapters 8 to 14, I present seven experiments that I executed to test the hypotheses developed. Finally, in chapter 15, I conclude with a discussion on the managerial and theoretical implications of my dissertation, limitations and avenues for future research.
2. Dissertation objectives and literature review

2.1. Why is understanding trivial attribute differentiation strategy important?

The concept of product differentiation is considered central to marketing strategy (Biggadike 1981; Shaw 1912). The explanation on how product differentiation manifests in the marketplace is rooted in economic theory and draws its lineage from two key formalizations. The first is Hotelling’s (1929) model of spatial competition. Hotelling (1929) proposed that competition between two sellers of a homogeneous product leads to their agglomeration at the center of a linear, bounded market. The implication of the model is that it is optimal for firms to make their products as similar as possible (also known as the principle of minimum differentiation). It has since been shown that Hotelling’s model applies to a multiple-firm market only when products and consumers are sufficiently heterogeneous (De Palma et al. 1985). Hence, sufficient product heterogeneity (or meaningful differentiation) is now an accepted component of recent adaptations of the original Hotelling model. The second formalization of differentiation stems from the theory of monopolistic competition (Chamberlin 1933). Firms in a monopolistic competitive setting produce and sell relatively distinct products (Lancaster 1990). Chamberlin demonstrated that in a monopolistic competitive setting, firms can sustain periods of superior financial performance by exploiting their unique capabilities and meaningfully differentiating (Barney 1986; Porter 1980). In other words, a firm can benefit financially by differentiating its products on any basis that is important to the buyer (Dickson and Ginter 1987). Drawing from
these economic roots, Porter (1985) also defines product differentiation as developing a unique position on an attribute that is widely valued by buyers.

To summarize, prior research suggests that effective differentiation involves meaningfully differentiating on important attributes. Such a paradigm would dismiss trivial differentiation as being transient and reversible because (a) consumers will not value trivial attributes, and because (b) competitors can easily replicate or introduce their own trivial attributes. Hence, the demonstration that trivial attribute based differentiation is not only possible but also durable is critical as it challenges the long-held view that effective differentiation can happen only on important attributes.

The effectiveness of trivial attribute differentiation also counters the prevailing view on sustained competitive advantage as suggested by resource based theory (RBT) (Peteraf and Barney 2003, Barney 1991; Lado and Wilson 1994; Kumar, Jones, Venkatesan and, Leone 2011). RBT suggests that sustained competitive advantage is derived from firm-specific resources that are scarce and superior, relative to others. Barney (1991) identified four criteria that resources must have in order to create sustained competitive advantage: value, rarity, imperfect imitability, and substitutability. Trivial attributes are neither valuable nor rare. Hence, if my dissertation shows that trivial attributes can provide sustained competitive advantage, it will demonstrate that value and rarity may not be necessary towards creating sustained competitive advantage. I’d like to qualify here that my definition of competitive sustainability (provided by trivial attribute differentiation) is consistent with Barney’s (1991) definition of sustained competitive advantage in strategy literature. Barney’s (1991) definition of sustained competitive advantage has two key elements. First, competitors do not implement the same competitive strategy as the focal firm. Second, when competitors retaliate, they are unable to
duplicate advantages that the focal-firm gained from the competitive strategy. My conceptualization of sustainability of trivial attribute differentiation matches these criteria as competition [in my paradigm] is unable to reverse or replicate the advantage that a first-mover gains by launching a trivial attribute.

Literature at the intersection of sustained competitive advantage and marketing suggests that there are three types of marketing resources that can provide sustained competitive advantage (Capron and Hulland 1999; Srivastava, Shervani and Fahey 1998; Vorhies and Morgan 2005). They are brands, sales force and general marketing expertise. However, market-based assets that reside with consumers have largely been ignored as sources of sustained competitive advantage. As an example, Srivastava, Fahey and Christensen (2001) identified the need to examine whether a brand’s claim over an attribute can be a potential source of sustained competitive advantage. My dissertation aims to address this question by examining whether the cognitive association between an attribute and a brand can be durable, and whether such associations can provide a brand with sustained competitive advantage.

Substantively, the use of trivial attribute differentiation appears commonplace in many product markets. Examples include Folgers’ use of patented flaked coffee crystals (Carpenter Glazer, and Nakamoto 1994), Pantene’s use of vitamins in their Pro-V shampoo (Broniarczyk and Gershoff 2003) and Activia’s use of the Bifidus Regularis ingredient in its yogurt (Xu and Wyer 2010). Many managers may nonetheless be ambivalent about deploying a strategy that requires capital investment to roll out a feature that provides no objective benefit. On one hand, managers may be concerned about negative ramifications of such a strategy, in case consumers equate it to be a misleading marketing ploy or puffery. For instance, Chrysler invested in an advertisement campaign in which Ricardo Montalbán promoted Chrysler’s Cordoba sedan
touting its *soft Corinthian leather* (a trivial attribute). However, Chrysler faced wide-spread criticism when it was learnt that there was nothing exotic or special about the leather, and that in fact the leather was mass-produced in New Jersey (Caro 2009). On the other hand, managers may find the potential advantage trivial differentiation provides (at relatively low cost) in increasing or safeguarding market-share against competition quite appealing. Hence, an understanding of whether trivial attribute differentiation is sustainable will help managers decide whether trivial attribute based marketing claims [that are devoid of objective customer benefit] are worth the risk. If the competitive advantage trivial attributes provide is easily reversible and not sustainable, launching them is clearly not worth the reputational risk.

To summarize, an understanding of the sustainable nature of trivial attribute differentiation contributes theoretically to the subjects of differentiation, consumer preference formation and competition. It also provides managerial implications for firms that are considering deploying trivial attribute differentiation, or planning to retaliate to a competitor that deploys a trivial attribute.

### 2.2. Conceptualization of trivial attributes

A trivial attribute has been conceptualized as a product attribute that appears valuable but on closer examination is irrelevant in creating the implied benefit (Carpenter, Glazer, and Nakamoto 1994). Trivial attributes provide no performance benefit but are perceived as ambiguously positive. As an example, Carpenter, Glazer, and Nakamoto (1994) used *alpine class down-fill* as a trivial attribute (in down jackets) in their experimental stimuli. When consumers encounter such a trivial attribute, they neither know the true objective value of such an attribute nor can they infer its value through use. However, they may still infer that the trivial attribute is
valuable. To illustrate, consider Henkel’s Dial-for-Men magnetic body-wash. Dial-for-Men is *pheromone* infused suggesting that the body wash makes men more attractive to women. At the surface, pheromones may appear valuable. However, research by independent consumer organizations such as Consumer Reports asserts that Dial for Men provides no such benefit, as humans do not have a functioning vomeronasal organ that is needed to detect pheromones (Consumer Reports 2011).

### 2.3. Important questions that have been addressed in the trivial attributes literature

Research on trivial attributes so far has primarily examined only the viability of a trivial attribute differentiation strategy and the factors that moderate the effectiveness of such a strategy. The dependent variables that have been studied include evaluation, choice and quality judgments of the brand introducing a trivial attribute.

The seminal paper in this area, Carpenter, Glazer, and Nakamoto (1994) demonstrated that a brand differentiated by a trivial attribute is evaluated more favorably than a brand that does not offer a trivial attribute. Carpenter, Glazer, and Nakamoto (1994) found that the positive effect of a trivial attribute on a differentiating brand’s evaluations persist even (a) when the irrelevance of the trivial attribute is revealed or (b) when the differentiating brand is priced higher than a competitor that does not offer a trivial attribute. They ascribed the positive effect of trivial attribute differentiation to the uniqueness and the novelty of the differentiated brand (Houston, Sherman, and Baker 1989; Kahneman 1973; McGill 1989) and suggested two reasons why a trivial attribute (despite its irrelevance) is not ignored by consumers. First, they proposed that consumers may engage in hypothesis testing in which they test the implied benefit of the trivial attribute (Deighton 1984; Hoch and Ha 1986). Their second argument on why trivial
attributes are not ignored is pragmatics. Considering that people are unable to make any semantic [literal] sense from the trivial attribute, they ascribe a pragmatic motive [which is positive] to a firm’s communication of the trivial attribute. Finally, the paper argued that the reason why the positive effects of a trivial attribute do not disappear when the attribute’s irrelevance is disclosed is due to perseverance effect. Perseverance effect suggests that when an incorrect claim is corrected by subsequent true information, the true information may still be ignored and the incorrect inference is likely to persist (Fiske and Taylor 1984). Such an incorrect claim likely becomes a belief that is difficult to dislodge (Crocker 1982).

Brown and Carpenter (2000) presented a reason-based choice explanation (Shafir, Simonson, and Tversky 1993) regarding why trivial attributes affect choice share. They suggested that if reasons based on important attributes are unavailable, people use reasons based on trivial attributes to solve choice tasks. Specifically, they proposed that consumers treat trivial attributes as valuable when such valuation helps them achieve a choice task. Further, they demonstrated that the same trivial attribute can generate a positive or negative effect on choice depending on whether the presence or absence of the trivial attribute provides a clearer justification for choosing a brand (over its competition).

A limitation of Carpenter, Glazer, and Nakamoto’s (1994) and Brown and Carpenter’s (2000) research was the rather artificial nature of their experimental manipulations. Their focus on experimental internal validity came at a cost. Specifically, neither of the studies used real-world brands. Broniarczyk and Gershoff (2003) attempted to close this gap by studying the impact of brand equity on the effectiveness of trivial attribute differentiation. Other factors that they studied were the decision context and the timing of disclosure of the trivial attribute’s irrelevance. Their results showed that both high and low equity brands benefit by trivial attribute
differentiation provided the irrelevance of a trivial attribute is not disclosed. However, if the irrelevance of the trivial attribute is disclosed, a low equity brand benefits by sharing a trivial attribute with a high equity brand. In contrast, a high equity brand benefits by uniquely offering a trivial attribute.

Research in the area has also investigated whether the effectiveness of trivial attribute differentiation is moderated by consumers’ perceived knowledge of the product category and contextual factors such as the credibility of the media vehicle used to advertise trivial attributes (Xu and Wyer 2010). Specifically, Xu and Wyer (2010) found that when consumers learn about the brand (with a trivial attribute) from a speciality media-outlet, trivial differentiation increases the evaluation of such a brand. In contrast, when the trivially differentiating brand’s advertisement appears in a generic media-outlet, consumers with low (high) category knowledge evaluate the brand more (less) favorably.

Other work on trivial attribute differentiation demonstrates that the effect of a trivial attribute on consumer preferences can supersede the effect of an important attribute such as price (van Osselaer, Alba and Manchanda 2004). Research also shows that introduction of a trivial attribute is effective in mitigating the regret arising from not purchasing a formerly inexpensive product and improving the likelihood of its purchase at a higher price (Kumar 2008).

Researchers in this domain have also investigated whether the label of a trivial attribute moderates its effectiveness. As an example, Broniarczyk and Gershoff (1997) demonstrated that the effectiveness of a trivial attribute is dependent on the label’s attractiveness. Similarly, Wanat (2008) found that the effectiveness of a trivial attribute in increasing brand evaluations is higher when the attribute is presented as a name (e.g., equipped with Map ShareR) than when the trivial attribute is descriptive (e.g., two-way structure of a loudspeaker) or numerical (e.g., brightness of
the LCD monitor is 300 cd/m2). In sum, not all trivial attributes have the same level of impact. Trivial attributes that have attractive, concise, and non-numerical labels are expected to have greater impact for differentiating brands.

While a majority of work on trivial attributes focuses on how firms may gain by deploying trivial attributes, recent research also demonstrates how trivial attributes may benefit consumers. Specifically, Vanhouche and van Osselaer (2009) found that the presence of a trivial attribute in a choice set improves consumers’ initial quality judgments after consumers receive quality feedback through either product trial or other external sources. In other words, if brands with trivial attributes have inferior quality, the benefit such brands obtain at the pre-trial stage is likely to be non-durable. This happens as the trivial attribute acts as a memory hook that helps consumers retrieve the relationship between a brand and the quality experienced during product trial (Vanhouche and van Osselaer 2009). Consider for example, purchasing a new brand of orange juice based on a trivial attribute [e.g., Patented Florida extraction process] and finding post-trial that the orange juice is of inferior quality. The Patented Florida extraction process now acts as a memory pointer that makes the association between the brand and the inferior product experience salient thereby reducing the brand’s re-purchase likelihood.

2.4. Gaps that remain in the trivial attributes literature

The most significant gap in the domain of trivial differentiation is whether the competitive advantage such differentiation provides is sustainable or not. It is surprising that this gap holds despite being identified early on, in the seminal paper on the subject (i.e. Carpenter, Glazer, and Nakamoto 1994). Specifically, Carpenter, Glazer, and Nakamoto (1994, pages: 348-349), in the discussion of their findings remarked, “Our analysis considers cases in which the
differentiating attribute is unique—that is, not copied by competitors. If competitors do react, is the competitive advantage sustainable?" A related remark reads, “Our demonstration that preferences can be influenced substantially by the attribute structure, prices, and available information raises another important question: Will these preferences be reinforced or eliminated through trial and use? Or, more generally, will these preferences persist?”

These questions remain crucial to the understanding of trivial attribute differentiation strategy. In my dissertation, I attempt to bridge these gaps. Specifically, I examine the following questions regarding the sustainability of trivial attribute differentiation.

First, not all brands in a product-market are equivalent in terms of their influence on consumers’ beliefs and hence may differ in their ability to enjoy sustained competitive advantage by launching trivial attributes. Therefore, I investigate whether dominant or non-dominant brands are more successful in sustaining the advantage provided by trivial attribute differentiation. Second, sustainability of the advantage that trivial attribute differentiation provides should ultimately depend on the type of retaliation [same trivial attribute, different trivial attribute, more attractive trivial attribute, price cut] and the nature of competing brands. To examine this, I construct multiple competitive scenarios and investigate the circumstances in which the advantage a first-mover gains by deploying trivial differentiation sustains or reverses. Third, I look at why trivial differentiation sustains only in certain competitive settings. I do this by examining the underlying choice strategies people adopt in different competitive scenarios.

Before I develop hypotheses on sustainability, there are important unresolved questions in the current understanding of the viability of trivial attribute differentiation. Closing these gaps provides a better foundation to develop hypotheses on sustainability. In the next section, I discuss three outstanding questions on the viability of trivial attribute differentiation. The first
question addresses the need to study the effect of trivial attributes on choice and evaluation in conjunction. Second, I discuss whether brand dominance moderates the effectiveness of trivial attribute differentiation and the cognitive mechanisms that underlie it. Third, I investigate whether the type of product category (low complexity vs. high complexity) moderates the effectiveness of trivial attribute differentiation. In the next section, I develop hypotheses for each of these three questions.
Chapter 3

3. Viability of trivial attribute differentiation (Unexamined questions)

3.1. Why should we study choice and evaluation in conjunction?

The current work on the viability of trivial attribute differentiation strategy measures either evaluation (Carpenter, Glazer, and Nakamoto 1994; Xu and Wyer 2010) or choice (Broniarczyk and Gershoff 2003; Brown and Carpenter 2000) as a dependent variable. So far, in the context of trivial attribute differentiation, research has not investigated the effects of choice and evaluation in conjunction. Choice and evaluation operate through different processes. An increase in choice share does not necessarily imply that the option is evaluated more favorably. As an example, Nedungadi (1990) demonstrated that factors other than evaluation such as cognitive accessibility may determine the consideration set that in turn affects choice. However, even in circumstances where cognitive accessibility of choice options is equivalent, choice and evaluations may operate distinctly for different types of brands.

When people are evaluating an option, they engage in a more holistic alternative-based processing (Bettman, Luce, and Payne 1998) than when they are choosing from an array of options. In evaluative processing, people typically follow an anchoring and adjustment approach while making an overall evaluation of the alternative. Specifically, people pick one item as the anchor or starting point for judgment and then adjust that anchor based on additional information associated with the alternative being evaluated (Lichtenstein and Slovic 1973; Payne 1982).

In contrast, in choice, the most preferred option is selected. The deliberations prior to choice are aimed at justifying the choice or “finding a concise, coherent set of reasons that justify the selection of one option over the others” (Payne 1982; Tversky 1972). Choice among options
is also context dependent in that the relative appeal of an option is dependent not only on characteristics of the option but also on characteristics of other options in the choice set. Choice evokes more qualitative (e.g., comparative) reasoning than evaluation that evokes more quantitative reasoning and a greater emphasis on task accuracy (Bettman, Luce, and Payne 1998). Further, in contrast with evaluation, attributes that can be compared directly assume greater weight in choice (Nowlis and Simonson 1997). Another explanation of why choice is distinct from evaluations is based on work by Tversky (1977) that focuses on similarity vs. dissimilarity judgments. A choice between options is based on the distinctive features of the options and not the features that are held in common.

Such asymmetries in choice and evaluation processes have been known to exist. For example, Lichtenstein and Slovic (1971) demonstrated that people would indicate preference for one gamble over a second gamble when a choice procedure was used but would prefer the second gamble when a bidding procedure was used.

To further illustrate this distinction between evaluation and choice processes, I present a simple example. Consider an individual Bryan [(a) whose home town is Toronto and (b) who is keen on getting the highest salary possible] is evaluating two job offers:

<table>
<thead>
<tr>
<th></th>
<th>Job offer A</th>
<th>Job Offer B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company</td>
<td>RBC</td>
<td>RBC</td>
</tr>
<tr>
<td>Location</td>
<td>Toronto</td>
<td>London</td>
</tr>
<tr>
<td>Designation</td>
<td>Analyst</td>
<td>Analyst</td>
</tr>
<tr>
<td>Salary</td>
<td>$60K</td>
<td>$70K</td>
</tr>
</tbody>
</table>
When Bryan is evaluating \textit{one job offer at a time}, he will use one of the attributes in the alternatives (job-offers) as an anchor and adjust from it. Considering that salary is the most important factor for Bryan, the anchor he will adjust from as he evaluates the two job offers will be \textit{salary}. In such a situation, the evaluation rating Bryan will give to job offer B is likely to be higher than job offer A. However, when Bryan is forced to choose between the two job-offers, he may still end up choosing job offer A (located in his hometown) over job offer B as \textit{location} which is comparable directly will now assume much greater weight in his decision-making.

To summarize, people adopt a more dimensional (attribute based) processing when choosing (Bettman, Luce, and Payne 1998) than when evaluating alternatives. Research that investigates the effect of real brands on trivial attribute differentiation (Broniarczyk and Gershoff 2003) examines choice as the \textit{only} dependent variable. This raises important questions regarding our current understanding of the role of brands in trivial attribute differentiation. Specifically, we do not know whether the choice share gained by brands in Broniarczyk and Gershoff’s (2003) study was accompanied by a simultaneous increase in evaluation.

Understanding this is crucial as brands that gain choice share without an increase in evaluation are \textit{unlikely} to sustain such a choice share gain. The choice share gain (without concurrent evaluation gain) could be the result of a temporary (peripheral) attitude shift that is less likely to endure (Petty and Cacioppo 1986).

Therefore, my dissertation tests hypotheses that predict the effects of trivial attributes on both choice share and evaluation. I develop specific hypotheses in the proceeding sections.
3.2. Does brand dominance affect the viability of trivial attribute differentiation?

Before discussing how brand dominance affects trivial differentiation, it is important to discuss why dominance is a more appropriate construct to use than equity in the context of understanding competitive advantage.

Why study dominance rather than equity? To understand how brands influence the sustainability of a trivial attribute differentiation in a competitive setting, two brand constructs can be used. The first construct is customer-based brand equity and the second is category dominance. Keller (1993) defined customer-based brand equity as the differential effect of brand knowledge on consumer response to the marketing of the brand. The second construct is brand dominance. Dominant brands are brands that are “well known, widely distributed, and well positioned, these brands dominate their markets, retaining the largest share of their markets after many competitive entries” (Carpenter and Nakamoto 1990, p. 1268). Such dominant brands are more prototypical and representative of their category and are therefore recalled more frequently, classified faster and recognized sooner (Nedungadi and Hutchinson 1985; Herr, Farquhar and Fazio 1996). These advantages are consequences of more and stronger associations between the dominant brand and the central features of the category.

Dominance is distinct from brand equity as it is by definition a relative concept and is category specific (Bagga, Noseworthy, and Dawar 2015). Dominance has an asymmetric relationship with other brand constructs. While strong dominance results in a more favorable brand attitude, a positive brand attitude does not imply category dominance. For example, while a brand such as Jaguar may have high equity, however it does not qualify as a dominant brand (such as Toyota) in the car category.
In the context of competition, dominance is a better construct to use than equity, as dominance is directly associated with consumer choice share (and by consequence market share) whereas equity is not. A majority of studies that investigate competitive dynamics typically use dominance as their preferred construct (Carpenter and Nakamoto 1989, 1990, 1996; Shankar 1999; Zhang and Markman 1998). A high equity brand with low market presence may not be interesting from a competitive perspective as it may serve only a narrow niche. In other words, the fact that many high equity brands do not operate market-wide, makes them less suitable for studying competition as gaining market share is the prime dependent variable in studies of competitive retaliation (Ferrier, Smith, and Grimm 1999).

Second, from a competition and categorization perspective, the brand equity construct suffers an additional handicap. The challenge of using the construct of equity in a competitive setting is that equity spans across different category levels. For example, although BMW is a high-equity brand in the car category, it can be argued that BMW actually resides in the cognitive subordinate (sub) category of luxury cars. This distinction is important from a competition perspective as the actions of BMW are likely to affect the choice probability of a competing luxury car brand such as Mercedes and not of a relatively low equity brand such as Kia. Understanding the impact of equity [in the context of BMW’s competitive actions] within the sub-category of luxury cars is irrelevant as all brands in the luxury car sub-category have high equity. To summarize, the product markets [in which competition happens] and the corresponding category representations in which low equity and high equity brands reside may not overlap making equity an unattractive construct for understanding competitive dynamics. This challenge is absent when dominance is used to analyze competition. At any category level
at which competition is analyzed, dominance [unlike equity] varies across brands\(^1\). As an example, BMW is a more dominant brand in the luxury car sub-category than Porsche. Similarly in the non-luxury (economy) car category, Toyota is more dominant than Kia.

The distinction between equity and dominance assumes further relevance as prior work on trivial attribute differentiation that investigates the effect of brands uses equity as its construct of choice (Broniarczyk and Gershoff 2003). In the operationalization used by Broniarczyk and Gershoff (2003), a dominant brand such as Walmart is a low equity brand and a non-dominant brand such as Eddie Bauer is a high equity brand. As argued, in the context of competition, two brands with different equities are likely to be part of separate product markets (or cognitive sub-categories) and hence their actions may not impact each other.

To summarize, the construct of dominance is more appropriate to understand competitive dynamics than equity. To that end, I study the effects of dominance on a differentiating brand’s effectiveness in deploying trivial attribute differentiation. For clarity, I define the characteristics of dominant and non-dominant brands in Table 1.

\(^1\) It is important to note that if a category level is such that there is a high level of choice substitutability among different category members, dominance and equity tend to be highly correlated. A high level of choice substitutability is more likely in subordinate categories (such as compact cars) rather than superordinate categories (such as vehicles). This notion that dominance and equity co-vary based on the category level is not without support. Loken and Ward (1990) found that brand typicality and attitude are closely correlated in sub-ordinate categories and not in super-ordinate categories. In lower level categories, dominant brands are likely to have a relatively high level of brand equity as dominant brands satisfy the criteria for high equity (Keller 1993): they have high awareness and enjoy a favorable brand image with consumers (within that category level).
Table 1: Distinction between Dominant and Non-dominant Brands

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Dominant Brand</th>
<th>Non-dominant Brand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Representation</td>
<td>Prototypical of category</td>
<td>Non-prototypical</td>
</tr>
<tr>
<td></td>
<td>Integral part of product schema</td>
<td>Not part of the product schema</td>
</tr>
<tr>
<td>Product Market Characteristics</td>
<td>High market share, Widely distributed</td>
<td>Low market share, Narrowly distributed</td>
</tr>
<tr>
<td>Equity</td>
<td>Relatively High</td>
<td>Relatively Low</td>
</tr>
<tr>
<td>Attitude</td>
<td>More favorable</td>
<td>Less favorable</td>
</tr>
<tr>
<td>Awareness</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>New Attribute Introduction</td>
<td>Consumers feel more certain regarding new attribute performance introduced by dominant brands</td>
<td>Consumers feel less certain regarding new attribute performance introduced by non-dominant brands</td>
</tr>
<tr>
<td>Examples</td>
<td>Nike in Sports-Shoes</td>
<td>Puma in Sports-Shoes</td>
</tr>
</tbody>
</table>
Evaluation: Do dominant or non-dominant brands gain evaluation by deploying trivial differentiation? I propose that only dominant brands gain evaluation when they introduce trivial attributes. I next present a set of theoretical arguments to support this proposition.

As argued earlier, when consumers evaluate options one at a time, they engage in alternative based processing. Under alternative-based processing, a consumer adopts an anchoring and adjustment approach to evaluation, by picking one of the attributes of the alternative and adjusting from it. When consumers evaluate real-world brands with trivial attributes, I propose that the attribute anchor used for evaluation is the brand itself, as it is the most diagnostic among all the alternative’s attributes. The brand name will help retrieve prior preferences from memory (Biehal and Chakravarti 1982; Feldman and Lynch 1988). Once the cognitions related to the brand become activated, adjustment based on other information available (that includes the presence or absence of a trivial attribute and other important attributes) will ensue.

I propose that when the initial anchor is a dominant brand, the adjustment process leads to a more favorable evaluation of the trivial attribute which in turn leads to a greater overall evaluation of the differentiating dominant brand. In contrast, when the initial anchor is a non-dominant brand, the trivial attribute is not evaluated favorably, which results in no increase in the evaluation of the non-dominant differentiating brand.

The reason a trivial attribute is evaluated more favorably when introduced by a dominant brand is a consequence of the stronger associations that exist between the dominant brand and category representations (Herr, Farquhar, and Fazio 1996). A dominant brand that is prototypical of the category is integral to the product schema itself. As an example, Coca Cola is so tightly linked to the cola category, that when consumers think of cola they tend to think of the Coca
Cola brand. This tight association of a dominant brand with the category is likely to increase the importance of the trivial attribute (introduced by the dominant brand), as dominant brands shift category beliefs towards the attributes they offer (Carpenter and Nakamoto 1989). For example, consider the case of Pantene’s (a dominant shampoo brand) introduction of vitamins in the shampoo category. Vitamins in shampoo fit the conceptualization of trivial attributes well². However, Pantene popularized the presence of vitamins in shampoos to such an extent that a large segment of consumers now expects vitamins to be part of a high-quality shampoo product. In fact many competing brands such as TreSemme and L’Oreal now offer vitamins in their shampoos as well. Further, a more favorable attitude associated with a dominant brand is advantageous in providing greater certainty about new attribute performance (Loken and Ward 1990; Nowlis and Simonson 1996). Based on the arguments presented, I predict:

**H1:** A dominant (non-dominant) brand’s evaluation increases (does not change) when it introduces a trivial attribute.

**H2:** A trivial attribute is rated more (less) favorably when a dominant (non-dominant) brand introduces it.

**H3:** A dominant brand’s evaluation increase is mediated by an increase in the importance of the trivial attribute it introduced.

*Choice: Do dominant or non-dominant brands gain choice share by deploying trivial differentiation?* I propose that *both* dominant and non-dominant brands gain choice share when they introduce trivial attributes. Choice between alternatives involves attribute based processing which is comparative in nature. In contrast to evaluation, attributes (such as trivial attributes) that can be compared directly assume more weight in choice (Nowlis and Simonson 1997).

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² Vitamins in shampoos do not benefit hair as hair (being a non-living tissue) cannot absorb any nutrients that are applied topically (Hill 2011).
Consumers compare available alternatives, dimension by dimension. If the difference between important attributes does not exist or is only marginally different, the presence or absence of the trivial attribute acts as a tie-breaker, providing justification to pick one option over the other (Brown and Carpenter 2000). Hence, irrespective of the dominance of the brand, the option with the trivial attribute should benefit in terms of choice share. In other words, both dominant and non-dominant brands should gain choice share by introducing trivial attributes. Formally:

**H4:** A brand gains choice share by introducing a trivial attribute, regardless of its dominance.

*Example of asymmetric effect of dominance on evaluation and choice.* I illustrate the predicted effects of dominance on evaluation and choice using an example. Assume that an individual is considering purchasing a refrigerator. She learns about a new trivial attribute (e.g., Alpine air purification system\(^3\)) that is being launched either by a dominant brand (e.g., Whirlpool) or by a non-dominant brand (e.g., Bosch).

When she hears that Whirlpool has launched the new attribute, Whirlpool’s (dominance over category beliefs) influences her perception regarding the new attribute. This increases the importance she gives to the trivial attribute which in turn increases Whirlpool’s evaluation. In contrast when she learns that Bosch has launched the attribute, the importance she gives to the new attribute does not change as Bosch does not have an ability to influence category beliefs.

In contrast in a choice situation that involves comparing Bosch and Whirlpool side-by-side, she has to make an attribute by attribute trade-off. Assuming all other features are equivalent, the brand with the new trivial attribute gains advantage in such dimensional processing as distinctive features that can be compared directly assume greater weight in choice.

Figure 1 summarizes the conceptual framework that predicts the effect of trivial attributes on the evaluation and choice share of differentiating brands.

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\(^3\) This is a hypothetical trivial attribute that I use for the purpose of this illustrative example.
Figure 1: Conceptual framework – Evaluation and choice share

- Evaluation process
- Alternative based processing
- Differentiating brand
- Dominant
  - Trivial attribute perceived as more important
    - Differentiating brand evaluated more favorably
- Non-dominant
  - No change in perception of trivial attribute
    - No change in evaluation of differentiating brand
- Brand differentiates with trivial attribute
- Choice process
- Attribute based processing
- Differentiating brand gains choice share regardless of dominance
3.3. Is trivial differentiation viable in both low and high complexity categories?

I propose that the viability of trivial attribute differentiation strategy is a function of the category’s complexity. Category complexity has been defined as the extent to which a product is difficult to understand and use (Rogers 1983). High (low) complexity products have a larger (smaller) number of attributes. A large number of product attributes exponentially increases the number of rules associated with category classification and application which makes the product category harder to understand and use [i.e., the category complexity increases] (Hutchinson and Alba 1991).

Whenever new attributes are introduced in a category, their eventual acceptance to an existing category representation is a function of whether consumers adopt or reject these attributes. Adoption of the new attributes happens through two processes, assimilation and accommodation (Mandler 1982; Piaget 1981). According to Sujan and Bettman (1989), accommodation occurs when the new attribute is extremely discrepant, and resolution in such circumstances happens by the formation of sub-categories to accommodate the discrepant instance. As an example, Vibram Five Finger shoes are extremely discrepant to consumers’ conceptualization of sports-shoes. As a result they get sub-typed as bare-foot sports shoes. When attribute incongruity is mild, the attribute adoption will happen through an assimilation process. To illustrate, an incremental innovation such as the new tablet feature of Retina-display (introduced by Apple) ultimately gets assimilated in the tablet schema.

Trivial attributes will integrate with existing category representations through an assimilation process as such attributes are only mildly incongruent with the existing schema. I predict that the likelihood of assimilation of trivial attributes in existing category representations,
and by consequence their viability as a differentiation strategy will be higher (lower) in a low (high) complexity category. I present two sets of arguments that explain why the viability of trivial attribute differentiation will vary by category complexity.

First, from a categorization perspective, assimilation follows the schema plus tag model (Graesser, Gordon, and Sawyer 1979). Sujan and Bettman (1989) suggest that moderately discrepant attributes that are not part of the schema, get linked to the schema representation by unique tags. In the context of high complexity categories, such as cars, smartphones etc. the total number of attributes is large to begin with. Hence, the volume of innovation in any given unit of time is high. This leads to a large number of new or modified attributes being introduced in the category per unit of time. Therefore, assimilation representation in the context of high complexity categories has multiple tags attached to the schema. In contrast, in low complexity categories such as coffee, shampoo etc. the number of new or modified attributes introduced per unit of time is relatively low. This suggests that the assimilation representation in the context of low complexity categories has few tags attached to the schema. The low number of tags in a low-complexity category makes a trivial attribute tag unique and salient. Uniqueness and salience of trivial attributes is responsible for the viability of trivial attribute differentiation (Carpenter, Glazer and Nakamoto 1994). Considering that a trivial attribute tag is unique and salient only in a low-complexity category, I argue that trivial attribute differentiation is viable only in a low-complexity category.

The second set of arguments is based on the cognitive cost-benefit analysis of inferences consumers make about novel attributes in decision making (Johnson and Payne 1985). Mukherjee and Hoyer (2001) propose that when evaluating novel attributes, consumers make two types of inferences, value inference and learning cost inference. Value inference implies that
consumers believe that a novel attribute is likely to provide some benefit. When consumers try to make sense of novel attributes, they typically make a value inference as they believe that firms seek to design products that are effective and beneficial (Friestad and Wright 1994). Learning costs on the other hand refer to the cognitive effort needed to acquire knowledge to use the new attribute effectively (Klemperer 1987). Mukherjee and Hoyer (2001) argue that learning cost is high (low) for novel attributes that are introduced in high (low) complexity categories. They ascribe this variation in learning costs to an associative process, as high (low) complexity products are by nature more (less) difficult to use and understand (Farrell and Shapiro 1988). In the case of low complexity products, when consumers perform a cost-benefit trade off, linear combinatorial models predict that the new attributes will be evaluated favorably as both the value inference and the learning cost inference have positive valence (Mukherjee and Hoyer 2001). In contrast, in high complexity categories the learning cost inference has negative valence that reduces the likelihood of the novel attribute being evaluated favorably. I propose that consumers make similar cost-benefit inference trade-offs when they first encounter trivial attributes [due to the novelty of trivial attributes] (Carpenter, Glazer, and Nakamoto 1994). This result in trivial attributes being evaluated more (less) favorably in low (high) complexity categories.

Combining these two sets of arguments and integrating them with prior hypotheses, I propose that viability of a trivial attribute differentiation strategy depends on the category’s complexity. Formally:

**H5-A:** Trivial attributes positively impact (do not impact) a dominant brand’s evaluation in low complexity (high complexity) product categories.

**H5-B:** Trivial attributes positively impact (do not impact) differentiating brands’ choice share in low complexity (high complexity) product categories.
Chapter 4

4. Sustainability of a trivial attribute differentiation strategy

Trivial attribute differentiation is of little benefit if the competitive advantage it provides is unsustainable. A competitor may retaliate with a similar or a different trivial attribute, which can potentially reverse any advantage that a first-mover brand gains by deploying trivial attribute differentiation.

A competing brand facing trivial differentiation faces multiple decisions. The first is whether to retaliate or not. Once a competitor decides to retaliate, it needs to decide on the instrumental dimension (element of marketing mix) to retaliate on, the intensity dimension (how strongly to retaliate), the speed dimension (how quickly to retaliate) and the domain dimension (the markets to retaliate) (Kuester, Homburg, and Robertson 1999). For the purpose of my dissertation, I focus only on two aspects of the instrumental decision (namely product and price).

There are four competitive retaliations that are likely in the context of trivial differentiation. A competitor may decide to launch the same trivial attribute, a different (equally attractive) trivial attribute, or a different (more attractive) trivial attribute. Finally, a competitor may provide a price discount.

I investigate fifteen competitive scenarios manipulating the first-mover, the retaliating brand and the retaliation strategy. Figure 2 presents a summary table of all the competitive scenarios I examine in my dissertation.
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>First-mover</th>
<th>Retaliator</th>
<th>Type of Retaliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>H9-A</td>
<td>Dominant</td>
<td>Non-dominant</td>
<td>Same trivial attribute</td>
</tr>
<tr>
<td>H9-B</td>
<td>Dominant</td>
<td>Non-dominant</td>
<td>Different trivial attribute (Equally attractive)</td>
</tr>
<tr>
<td>H9-C</td>
<td>Dominant</td>
<td>Non-dominant</td>
<td>Different trivial attribute (More attractive)</td>
</tr>
<tr>
<td>H10-A</td>
<td>Non-dominant</td>
<td>Dominant</td>
<td>Same trivial attribute</td>
</tr>
<tr>
<td>H10-B</td>
<td>Non-dominant</td>
<td>Dominant</td>
<td>Different trivial attribute (Equally attractive)</td>
</tr>
<tr>
<td>H10-C</td>
<td>Non-dominant</td>
<td>Dominant</td>
<td>Different trivial attribute (More attractive)</td>
</tr>
<tr>
<td>H11-A</td>
<td>Non-dominant</td>
<td>Other Non-dominant</td>
<td>Same trivial attribute</td>
</tr>
<tr>
<td>H11-B</td>
<td>Non-dominant</td>
<td>Other Non-dominant</td>
<td>Different trivial attribute (Equally attractive)</td>
</tr>
<tr>
<td>H11-C</td>
<td>Non-dominant</td>
<td>Other Non-dominant</td>
<td>Different trivial attribute (More attractive)</td>
</tr>
<tr>
<td>H13-A</td>
<td>Dominant</td>
<td>Non-dominant</td>
<td>Price cut (Retaliator: Frequent price promoter)</td>
</tr>
<tr>
<td>H13-B</td>
<td>Dominant</td>
<td>Non-dominant</td>
<td>Price cut (Retaliator: Rare price promoter)</td>
</tr>
<tr>
<td>H14-A</td>
<td>Non-dominant</td>
<td>Dominant</td>
<td>Price cut (Retaliator: Frequent price promoter)</td>
</tr>
<tr>
<td>H14-B</td>
<td>Non-dominant</td>
<td>Dominant</td>
<td>Price cut (Retaliator: Rare price promoter)</td>
</tr>
<tr>
<td>H15-A</td>
<td>Non-dominant</td>
<td>Other Non-dominant</td>
<td>Price cut (Retaliator: Frequent price promoter)</td>
</tr>
<tr>
<td>H15-B</td>
<td>Non-dominant</td>
<td>Other Non-dominant</td>
<td>Price cut (Retaliator: Rare price promoter)</td>
</tr>
</tbody>
</table>
Chapter 5

5. Sustainability of trivial differentiation against product based retaliation

To study the sustainability of trivial attribute differentiation, I examine whether the choice-share gained by a first-mover [due to the introduction of a trivial attribute] holds at the retaliation stage [in which a competitor retaliates with its trivial attributes]. Specifically, I study choice share shifts within a set of competing brands to determine when a first-mover trivial differentiation is sustainable. I construct my choice sets as brand-attribute matrices. The brands in the choice sets include both important attributes and trivial attribute(s). This is consistent with prior trivial attributes literature that use brand attribute matrices for studying trivial attribute differentiation (Carpenter, Glazer, and Nakamoto 1994; Broniarczyk and Gershoff 2003).

The choice sets (brand attribute matrices) that I use fit the definition of mixed choice sets in that choice is based on the interplay of information physically available (based on the stimuli) and other brand and attribute related information that is retrieved from memory (Lynch and Srull 1982). To develop the sustainability hypotheses for the different competitive scenarios, it is important to understand the choice strategies consumers are likely to use when evaluating or choosing an option from a choice set.

5.1. Choice strategy during first-mover differentiation stage

The type of choice strategy a consumer adopts depends on her goals that primarily include a combination of meta-goals such as maximizing accuracy and ease of justification and minimizing cognitive effort and negative emotions (Bettman, Luce, and Payne 1998).
Although, a classic choice strategy such as weighted-addition is normatively most accurate, it is unlikely that people engage in it in low-involvement purchase settings as it is effortful and extensive compared to other choice strategies (Tversky 1972). Further, people may not be motivated to assign subjective weights to different attribute dimensions, required for a weighted-addition strategy.

In that sense, I adopt a constructive view of choice (Bettman, Luce and Payne 1998). Under such a paradigm, consumers are likely to use simpler choice heuristics when choosing a brand from a brand-attribute matrix. Such choice heuristics may either be available in memory through prior experience or may be constructed during the choice task (Bettman and Park 1980). I propose that consumers follow one of three choice strategies when they choose among brands of which only one offers a trivial attribute.

The first strategy that consumers can adopt is to use a simple memory based choice heuristic i.e., *brand based processing*. When consumers have well developed heuristics available in memory such as prior cognitions about brands, the choice processing will not be constructive (Bettman, Luce, and Payne 1998). Rather, consumers use simple choice heuristics such as “buying the best known brand” to economize effort (Hoyer and Brown 1990). Hence, a set of consumers, specifically those with relatively high category knowledge, are unlikely to engage in an attribute by attribute comparison (Bettman and Park 1980). Instead, they choose only by brand.

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4 “...The idea of constructive preferences denies that individuals simply refer to a master list of preferences in the memory when making a choice and also asserts that preferences are not necessarily generated by applying some invariant algorithm such as a weighted adding model. Rather than one invariant approach to solving choice problems, consumers appear to utilize wide variety of approaches, often developed on the spot....” (Bettman, Luce and Payne 1998, page 188)
The second and third choice strategies are constructed during the choice task. The second strategy that consumers can adopt is a *lexicographic* choice strategy. Under lexicographic processing, the alternative with the best value on the most important dimension is selected. As an example, a car customer who is very safety conscious will likely choose the car brand that is rated highest on the safety dimension.

The third approach is a strategy that I label *trivial attribute processing*. In this processing, there are three possibilities. In the first, a consumer acknowledges the presence of the trivial attribute but is unable to make sense of it. In such a circumstance, she discounts the trivial attribute as truly irrelevant for making the choice and reverts to either a brand based or a lexicographic choice strategy. The second possibility is identical to lexicographic processing in that the consumer considers the trivial attribute as important and selects the alternative that has the most attractive value on the trivial attribute dimension. The third possibility occurs when a consumer engages in the choice strategy of *majority of confirming dimensions* (Bettman, Luce, and Payne 1998), in which the alternative with the majority of winning (or better) attribute values is selected. Under this strategy, the alternative with a trivial attribute is selected, as a trivial attribute when added to other important attribute(s) makes this alternative the most attractive on the majority number of attributes. I coin the new label, *trivial attribute processing* for the second and third scenarios discussed here. This label classifies those consumers that process a trivial attribute and use it to make choice.

Finally, while other choice heuristics such as satisficing and elimination by aspects are theoretically possible, consumers are less likely to use them. This is mostly a function of the choice set operationalizations used in trivial attribute research that have limited and counter-balanced variance on important attributes (between brands).
5.2. Choice strategy during the competitive retaliation stage

Assuming that the product experience of the brand selected at the first-mover stage is ambiguous, the choice strategy used when evaluating the choice set at the retaliation stage is likely to depend on the initial choice strategy adopted by consumers.

If the initial [first-mover stage] strategy adopted is brand-based, the choice strategy is unlikely to change in the event of competitive retaliation. This is expected as consumers who have strong prior brand preferences will continue to discount all attributes (important or trivial) and continue to choose by brand (Bettman and Park 1980).

Similarly, for consumers who adopted a lexicographic strategy when choosing from the initial choice set at the first-mover stage, I propose that they will again use a lexicographic strategy for choice at the retaliation stage. It is unlikely that they will alter their (previously revealed) strong preference for an important attribute for something trivial which they already rejected in the initial choice set. Even if the trivial attribute offered by the competitor is different, it is unlikely to make a difference as the important attribute such consumers selected was chosen over brand and other important attributes in the choice set.

In contrast, if the initial choice strategy (used at the first-mover stage) is trivial attribute processing, the strategy of selecting a brand at the retaliation stage will change.

If a competitor retaliates with the same trivial attribute, the uniqueness and novelty of the trivial attribute is neutralized. The nature of the choice-set at the retaliation stage is such that the both the first-mover and the retaliator now have the same trivial attribute. Hence, consumers that chose based on the trivial attribute at the first-mover stage no longer have the opportunity to choose (either the first-mover or the retaliator) on the basis of the trivial attribute anymore. To illustrate, if shampoo brands, Pantene and Aveeno have the same trivial attribute (e.g., vitamins);
a customer can no longer pick one of the two brands on the basis of vitamins. In such a scenario, trivial attribute processors will revert to a brand-based or lexicographic choice strategy.

If a competitor retaliates with a different trivial attribute, I propose that consumers select the alternative based on the relative value of the two trivial attributes. I label such a choice strategy as *relative trivial attribute* processing strategy. In such a strategy, I also expect that the attributes’ relative value is weighted by the dominance of the brands introducing the trivial attributes. This happens as memory and choice decisions interact and consumers use the diagnosticity of the prior brand cognitions to help them infer the value of different trivial attributes (Lynch, Marmorstein, and Weigold 1988). The hypotheses below follow from the choice strategies discussed in this section.

**H6:** If brand based or lexicographic processing mode is used for choice at the first-mover stage, the choice strategy will remain the same at the retaliation stage.

**H7:** If a trivial attribute processing strategy is adopted for choice at the first-mover stage and if a competitor retaliates with the same trivial attribute, the choice strategy will change to either a brand based or a lexicographic strategy.

**H8:** If a trivial attribute processing strategy is adopted for choice at the first-mover stage and if a competitor retaliates with a different trivial attribute, the choice strategy will change to *relative trivial attribute* processing (in which two meaningless trivial attributes will be compared).

### 5.3. Factors that affect choice at the retaliation stage

I propose that there are four factors that contribute to a consumer’s decision when she selects a brand at the retaliation stage. The first factor is the tendency to stick with the initial choice, which I label *initial choice preference*. In sequential choice processes, there is an
ongoing interaction of choice and preference, in that past choice affects preferences and the
preferences formed affect future choices (Carpenter and Nakamoto 1988). If a brand is chosen
and the brand performance is satisfactory, there is inertia to change and the probability that the
same brand is selected again increases (Howard and Sheth 1969). A choice task allows the use of
phased decision rules that eliminate alternatives and hence leads to a selective retention of brand
information favoring the chosen brand (Johnson and Russo 1984). This selective retention
benefits the initially chosen brand even if the prior inferior brands become attractive by
incorporating new attributes (Biehal and Chakravarti 1982, 1983).

The second factor is the presence or absence of (what I label) the initial evaluation
advantage. As argued above, the initial evaluation advantage (or the pre-trial evaluation gain) is
only present when the first-mover is a dominant brand. This is because when a dominant brand
engages in trivial attribute differentiation, it gains both choice share and evaluation. In contrast, a
non-dominant brand gains choice share without any increase in its evaluation.

The third factor that plays a role is the diagnosticity of prior brand cognitions. Choice
depends on the attributes in the choice set as well as the brand related information in memory
(Lynch and Srull 1982). Lynch, Marmorstein, and Weigold (1988) suggested that the probability
that prior brand cognitions from memory are used for making a choice is dependent on whether
these cognitions are accessible and diagnostic. As all brands in the choice set are accessible, only
their diagnosticity in helping perform the choice task matters. In the context (of making a choice)
the most diagnostic feature of prior brand cognitions is a brand’s dominance. Hence, brand
dominance is likely to impact the weight consumers give to a particular feature (in an attribute
level comparison) as they choose among the alternatives at the retaliation stage.
The fourth factor that may play a role is the *attractiveness of the trivial attribute label*. This factor will only play a role when the relative attractiveness of the trivial attributes being compared differs. Broniarczyk and Gershoff (1997) demonstrated that the relative attractiveness of a trivial attribute’s label affects its ability to help brands successfully differentiate. They argued that this is expected as the favorableness of differentiation is a function of the benefits consumers infer from an attribute (Fishbein and Azjen 1975). Hence, the more attractive the trivial attribute, the greater the benefit consumers will infer from the trivial attribute. To illustrate, consumers are likely to infer greater value from Vitamin A + D in a shampoo brand over just Vitamin A in a shampoo brand (although neither vitamin provides any objective benefit as a shampoo ingredient).

5.4. **Sustainability hypotheses for product based retaliation**

I propose nine hypotheses specific to retaliation involving trivial attributes. The factors I manipulate are the dominance of the first-mover and the retaliator as well as the retaliation type: (a) same trivial attribute, (b) different [equally attractive] trivial attribute, and (c) different [more attractive] trivial attribute. Figure 3 summarizes the theoretical framework for this section.

*Dominant first-mover, non-dominant retaliates with same/different (equally attractive) trivial attribute.* I predict that when a dominant brand is the first-mover and a non-dominant brand retaliates with the same or a different (equally attractive) trivial attribute, the dominant brand sustains its first-mover choice share gain.

This happens as all three factors that influence choice at the retaliation stage favor the first-mover. The dominant brand enjoys both an initial choice preference and an initial evaluation advantage that it gained by adopting a first-mover trivial differentiation strategy.
Third, although the dominant first-mover no longer has the advantage of offering the trivial attribute uniquely, the diagnosticity of prior brand cognitions still favors the first-mover as both the first-mover and the retaliator are now equally attractive on the trivial attribute dimension. The fourth factor (i.e., the attractiveness of trivial attribute label) will not play a role in these scenarios as the attributes are equally attractive. Considering that all three applicable factors favor the dominant brand, I predict:

**H9-A:** Choice share gain made by a first-mover dominant brand sustains in the event of retaliation by a non-dominant brand that launches the same trivial attribute.

**H9-B:** Choice share gain made by a first-mover dominant brand sustains in the event of retaliation by a non-dominant brand that launches a different (equally attractive) trivial attribute.

*Dominant first-mover, non-dominant retaliates with a more attractive trivial attribute.*

When the retaliation involves the introduction of a more attractive trivial attribute by a non-dominant brand, the fourth factor (i.e., the attractiveness of the trivial attribute label) favors the retaliating non-dominant brand. However, the majority (three of four) factors that influence choice at the retaliation stage still favor the dominant first-mover.

I predict that a relative improvement on the trivial attribute dimension is unlikely to counter the multitude of factors that run against the retaliating non-dominant brand.

The more attractive trivial attribute does not provide the retaliating brand uniqueness in the choice set. The first-mover still has a trivial attribute. As argued earlier, consumers will now engage in *relative trivial attribute* processing. In *relative trivial attribute* processing, consumers will still be unable to comprehend any objective benefit from either trivial attribute. Hence, they are likely to rely on the diagnosticity of prior brand cognitions to make sense of the trivial attributes. The value of the more attractive label is likely discounted as it gets weighted down
due to the relatively unfavorable cognitive associations that the non-dominant brand has with the category. Hence, the more attractive trivial attribute introduced by the non-dominant retaliator is unlikely to benefit it. Formally, I hypothesize:

**H9-C:** Choice share gain made by a first-mover dominant brand sustains in the event of retaliation by a non-dominant brand that launches a different (more attractive) trivial attribute.

*Non-dominant first-mover, dominant retaliates with same/different (equally attractive) trivial attribute.* In this scenario, only one of the three applicable factors (i.e., initial choice preference) works in favor of the non-dominant first-mover at the retaliation stage.

When the dominant brand launches an equally attractive trivial attribute, the uniqueness that the first-mover non-dominant brand enjoyed in the choice set vanishes. The diagnosticity of prior brand cognitions strongly favors the retaliating dominant brand as the first-mover and the retaliator are now equally attractive on the trivial attribute dimension. Importantly, no initial evaluation advantage had accrued for the first-mover non-dominant brand. As argued, an initial choice gain devoid of a concurrent evaluation gain is unlikely to be durable. Consumers also did not obtain any objective benefit using the non-dominant first-mover brand over their preferred brand from product experience. Hence, when their otherwise preferred brand now offers a similar attribute, the attractiveness of the non-dominant brand should fall. Based on these arguments, I predict that the choice share advantage a non-dominant brand gained as a first-mover (primarily at the expense of the dominant brand) will suffer. Formally:

**H10-A:** A first-mover non-dominant brand loses choice share in the event of retaliation by a dominant brand that launches the same trivial attribute.

**H10-B:** A first-mover non-dominant brand loses choice share in the event of retaliation by a dominant brand that launches a different (equally attractive) trivial attribute.
Non-dominant first-mover, Dominant retaliates with a more attractive trivial attribute.

Under this scenario the fourth factor (i.e., the attractiveness of the trivial attribute label) also favors the retaliating dominant brand. As I argued in the preceding section, the net effect of the remaining factors (diagnosticity of prior brand cognitions and initial choice preference without initial evaluation gain) favors the retaliating dominant brand. An additional factor in favor of the retaliating dominant brand should further strengthen the likelihood that consumers will choose the retaliating dominant brand. Hence, I predict:

**H10-C:** A first-mover non-dominant brand loses choice share in the event of retaliation by a dominant brand that launches a different (more attractive) trivial attribute.

Non-dominant first-mover, another non-dominant retaliates with same/different (equally attractive) trivial attribute. In this setting, a non-dominant brand has an initial choice preference advantage. None of the other three factors that influence choice at the retaliation stage are applicable. First, neither the first-mover nor the retaliator gains evaluation by introducing a trivial attribute. Second, the diagnosticity of prior brand cognitions does not play any role as both brands are perceptually non-dominant. Third, the attractiveness of the trivial attribute label does not play a role as the trivial attributes are equally attractive.

Considering that the only factor that influences choice at the retaliation stage favors the first-mover non-dominant brand, I predict that the first-mover will sustain its choice share gain. Formally:

**H11-A:** Choice share gain made by a first-mover non-dominant brand sustains in the event of retaliation by another non-dominant brand that launches the same trivial attribute.
**H11-B:** Choice share gain made by a first-mover non-dominant brand sustains in the event of retaliation by another non-dominant brand that launches a different (equally attractive) trivial attribute.

*Non-dominant first-mover, another non-dominant retaliates with a more attractive trivial attribute.* In this scenario, two of the four factors that influence choice at the retaliation stage are in play. One of them favors the first-mover and the other favors the retaliator. Specifically, the first-mover has an initial choice preference advantage while the retaliator scores higher on the trivial attribute attractiveness dimension.

I argue that when *relative trivial attribute* processing occurs, the retaliating brand is likely to be chosen over the first-mover. This should happen as the initial choice share preference for the first-mover is relatively weak and reversible as no initial evaluation advantage had accrued for the first-mover. Further, the diagnosticity of prior brand cognitions will not play a role as both brands have weak associations with the category.

Given these factors, consumers will simply compare the two non-dominant brands on the trivial attribute dimension. The retaliating brand is more likely to be chosen over the first-mover as it is more attractive on the trivial attribute dimension. Formally, I predict:

**H11-C:** A first-mover non-dominant brand loses choice share in the event of retaliation by another non-dominant brand that retaliates with a different (more attractive) trivial attribute.

Figure 3 below summarizes the theoretical framework developed in this section.
<table>
<thead>
<tr>
<th>H</th>
<th>First Mover</th>
<th>Retaliator</th>
<th>Type of Retaliation</th>
<th>Factors favoring choice of first-mover at Retaliation Stage</th>
<th>Does First-mover sustain its choice share gain?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Initial Choice Share Preference</td>
<td>Initial Evaluation Advantage</td>
</tr>
<tr>
<td>H9A</td>
<td>Dominant</td>
<td>Non-dominant</td>
<td>Same</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>H9B</td>
<td>Dominant</td>
<td>Non-dominant</td>
<td>Different</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>H9C</td>
<td>Dominant</td>
<td>Non-dominant</td>
<td>Different</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>H10A</td>
<td>Non-dominant</td>
<td>Dominant</td>
<td>Same</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>H10B</td>
<td>Non-dominant</td>
<td>Dominant</td>
<td>Different</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>H10C</td>
<td>Non-dominant</td>
<td>Dominant</td>
<td>Different</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>H11A</td>
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<td>Other Non-dominant</td>
<td>Same</td>
<td>✓</td>
<td>N/A</td>
</tr>
<tr>
<td>H11B</td>
<td>Non-dominant</td>
<td>Other Non-dominant</td>
<td>Different</td>
<td>✓</td>
<td>N/A</td>
</tr>
<tr>
<td>H11C</td>
<td>Non-dominant</td>
<td>Other Non-dominant</td>
<td>Different</td>
<td>✓</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Legend**

✓  Factor favors first-mover  ×  Factor does not favor first-mover  N/A  Not applicable
Chapter 6

6. Sustainability of trivial differentiation against retaliatory price cuts

New product introductions by a brand can adversely impact the profitability of competitors and therefore retaliation is expected (Porter 1980). An important counter-move that a competitor may adopt in response to a successful first-mover trivial attribute differentiation is to cut prices of existing products to avoid loss of market share.

When speed of retaliation is critical, a price-cut is often the tool of choice as it is less resource-intensive and can be adopted quickly (Aydinli, Bertini, and Lambrecht 2014; Chen, Marmorstein, Tsiros, and Rao 2012). In contrast, a product based retaliation (that involves introducing the same or a different trivial attribute) may delay retaliatory response, as modified products will likely require additional product research as well as an adjustment of manufacturing processes and customer communication. Not surprisingly, price cuts are the most common form of competitive promotional activity (van Heerde, Gijsbrechts, and Pauwels 2008). In fact in certain product categories, more than half of the total sales volume is price promoted (Blattberg and Neslin 1990).

Considering the prevalence of price promotion as a competitive strategy and its relative ease of deployment, it is important to understand whether and why a first-mover trivial differentiation can withstand a price-based retaliation. If the advantage a brand gains by adopting trivial differentiation is reversed in the event of a retaliatory price cut, it will show that the benefit of trivial differentiation is relatively transient. Conversely, understanding the
sustainability of trivial differentiation against price based retaliation will shed light on the
strength of the differentiation achieved.

6.1. What is the effect of price cuts on brand choice share and evaluations?

The positive short-term impact of price promotions on choice share (in the context of
generic brand competition) is well established. A price cut enhances the overall value of an
option and creates an economic incentive to purchase (Alvarez and Casielles 2005; Zhang and
Wedel 2009). Managers pressed for speedy results often turn to promotional tools such as price
cuts that directly influence behavior rather than to tools such as advertising that affect attitudes,
an antecedent of behavior (Papatla and Krishnamurthy 1996).

However, price promotions do not come without costs. Marketers have long worried that
price cuts may impact brand evaluations negatively. As an example, Papatla and Krishnamurthy
(1996), who investigated the effect of promotions in the detergent category, found that increased
promotional activity eroded brand loyalty. Similarly, Scott and Yalch (1980) found that people
preferred the taste of a brand more when it was not price promoted. The underlying
psychological reason posited for the negative impact of promotion on evaluations is that people
use price as a product quality cue (Rao 2005; Rao and Monroe 1988). Specifically, consumers
are likely to interpret a reduced price (due to promotion) as a signal of diminished quality that in
turn results in lower evaluations.

However, a promotion may not always impact the brand negatively. A promotion’s
negative impact on evaluations is moderated by factors such as a brand’s past promotional
behavior, frequency of promotions in the category and consumer expertise (Raghubir and
Corfman 1999).
Quality inferences based on price are found to be stronger when consumers have either a lower motivation or a lower ability to process product related information (Kardes et al. 2004; Suri and Monroe 2003). Meta-analytic reviews have also provided evidence that a moderately strong negative relationship exists between perceived quality and price (Völkner and Hofmann 2007).

It is important to note that reduced brand evaluations (due to promotions) may not necessarily impact choice. Ultimately, a price cut results in consumers making a trade-off between the economic incentive (of purchasing at a lower price) and the psychological disincentive (of purchasing a low cost item construed to be of lower quality) (Monroe and Krishnan 1985; Rao and Monroe 1988). If the economic incentive of a promotion is high enough, it is likely to overcome the psychological disincentive of lower inferred quality. In other words, the low evaluation of a brand due to a price promotion may not always result in a loss of choice-share.

For the purpose of my dissertation, I study only those retaliatory price cuts that are not predatory in nature. Any brand can potentially gain monopolistic market share if it engages in predatory pricing providing an extreme economic incentive to consumers to choose it over its competitors. Predatory pricing involves lowering prices below average variable costs (Scherer 1975) to an unprofitable level to weaken or eliminate competition (Guiltnan and Gundlach 1996). The fact that the predatory pricing practice is illegal in many countries [including the United States under the Sherman Act (Dixit, Gundlach, Malhotra and Allvine 2006; Tellis 1986)] makes it irrelevant to my study.

To develop the sustainability hypotheses for price based competitive retaliation, I first discuss the choice strategies that consumers are likely to use at the first-mover differentiation
stage and the competitive retaliation stage. As in Chapter 5, I investigate the effects of retaliation on the first-mover’s choice share by studying choice share shifts within a set of brands [in which one brand introduces a trivial attribute as a first-mover and a competing brand retaliates with a price cut].

6.2. Choice strategies used at first-mover stage and retaliation stage

As discussed previously in the section on product based retaliation, two choice strategies are likely at the first-mover stage [if the choice set varies only on trivial attributes and brands]. A segment of consumers, specifically those with relatively high category knowledge are likely to use a memory-based choice heuristic and choose primarily by brand (Bettman and Park 1980). The second segment of consumers will engage in trivial attribute processing, in which they use the trivial attribute to choose a brand.

At the retaliation stage when a competitor responds with a price-cut, two possibilities exist.

If consumers initially engaged in brand based processing, it is unlikely that they will change their choice strategy. A trivial attribute will still be discounted by these consumers as they have already revealed (at the first-mover stage) that they do not infer any value from trivial attributes. Further, it is unlikely that a price-cut will make them switch brands, as consumers with strong brand preferences do not view price changes as gains or losses and are relatively insensitive to price changes of their favorite brands (Krishnamurthi and Raj 1991; Krishnamurthi, Mazumdar, and Raj 1992).
In contrast, if consumers initially engaged in trivial attribute processing\(^5\), I propose that such consumers will now compare the perceived value of the trivial attribute versus the value of the price cut [at the retaliation stage]. I label such a choice strategy: *price versus trivial attribute* processing. The choice set now has two distinctly attractive alternatives that are most likely to be compared, (a) an alternative (first-mover) with a trivial attribute, and (b) an alternative (retaliator) with a better price. In such a processing, consumers will choose a brand based on a trade-off between their value inference of the trivial attribute and their value inference of the price differential between brands. To illustrate in a category like coffee: consumers may evaluate whether a trivial attribute such as *high-altitude roasting process* offered by brand X is valuable enough to forego a price-discount by a competing brand Y.

The hypotheses below follow from the choice strategies discussed in this section.

**H12-A:** If brand based choice strategy is used at the first-mover stage, the choice strategy will remain the same at the price-retaliation stage.

**H12-B:** If trivial attribute processing is used at the first-mover stage, then a comparison between the perceived value of the trivial attribute and the price-cut will occur at the price-retaliation stage.

---

\(^5\) It is *unlikely* that consumers that chose based on trivial attribute at the first-mover stage will choose based on brand at the retaliation stage. The initial choice strategy (of trivial attribute processors) revealed that such consumers do not use brand based choice heuristics. This may be either because (a) the brand heuristics of such consumers are not well developed or (b) they value choice-task accuracy over economizing effort (Hoyer and Brown 1990). As neither of these two factors change between the first-mover stage and the retaliation stage, it is unlikely that consumers that chose based on trivial attribute at the first-mover stage will choose based on brand at the retaliation stage.
6.3. Factors that affect consumer choice when competition retaliates with a price cut

As argued, when consumers choose a brand at the price retaliation stage, they engage in a trade-off between their value inference of the trivial attribute and the value they assign to the price cut. Five factors can influence brand choice when consumers perform such processing. The first three factors that affect choice at the price retaliation stage are the same that were relevant in the context of retaliation involving the same or different trivial attributes. Specifically, (a) initial choice preference, (b) initial evaluation advantage (i.e., pre-trial evaluation gain) and (c) diagnosticity of prior brand cognitions still play a role in decision making.

A fourth factor that will influence brand choice at the retaliation stage is the quality inference of promotion. When consumers encounter price cuts, attribution theory suggests that consumers attribute reasons regarding why brands are offering price cuts (Folkes 1988; Raghubir and Corfman 1999). If consumers attribute the promotion to a brand related cause, the valance of such attributions is typically negative (Lichtenstein, Burton, and O’Hara 1989). Hence, when a brand retaliates with a price-cut in response to trivial differentiation by a first-mover, consumers’ may perceive the price-cut as a signal of the retaliator’s lower relative quality. This happens as consumers are likely to think of price-cuts by retaliators as a strategy to compensate for their inability to introduce new attributes. In other words, consumers are likely to interpret the price cut to be indicative of the trivial attribute’s importance, which in turn leads to the inference that the trivially differentiating brand has higher relative quality.

However, the inferences that retaliators (that cut prices) have diminished quality may not always apply. It also depends on the consistency of a brand’s past promotional behavior (Lichtenstein and Bearden 1989; Raghubir and Corfman 1999). Raghubir and Corfman (1999)
demonstrate that promotions impact a brand negatively only if the brand did not offer promotions in the past. They argue that this happens as quality inferences from a promotion are dependent on whether the promotion serves an informational function. A current promotion informs little if a brand frequently promoted in the past. In contrast, if a brand rarely promoted in the past, a promotion such as a price-cut is informative and is likely to lead to negative attributions for the promoted brand. To summarize, a brand’s past promotional behavior moderates the quality inferences that consumers make regarding it.

A fifth factor that may impact choice at the retaliation stage is the relative attractiveness of the trivial attribute and the price cut. If the price cut is very attractive, the economic incentive will easily overcome any psychological benefit a trivial attribute provides as many segments of consumers have high utility for price over other attributes (Currim, Weinberg, and Wittink 1981). In contrast, if the price-cut is too low, it may seem unattractive (Sethuraman and Tellis 1991) and people may be drawn towards the trivial attribute. To avoid extreme effects that may be driven by high (or negligible) level of price-cuts, I control for this factor in my theoretical development and empirical examination. Specifically in the corresponding experiment, I introduce a price cut level that (on an aggregate) makes people indifferent between choosing the trivial attribute and the price cut. Given, that I experimentally control for this factor, it does not feature prominently in the theoretical development that follows.

### 6.4. Sustainability hypotheses for attacks involving price cuts

I investigate six competitive scenarios (involving price retaliations) that I create by manipulating (a) the dominance of the first-mover that introduces a trivial attribute, (b) the
dominance of the retaliator that launches a price cut and (c) the retaliator’s past promotional behavior. Figure 4 summarizes the theoretical framework for this section.

**Dominant first-mover, non-dominant brand (frequent promoter) retaliates.** I propose that a dominant brand sustains its first-mover choice share gain. In this setting, the dominant first-mover enjoys an initial choice preference as well as an initial evaluation advantage [i.e., pre-trial evaluation gain]. The diagnosticity of prior brand cognitions also favors the first-mover.

Hence, when the *price versus trivial attribute* processing happens, the increased pre-trial evaluation (coupled with the initial choice preference) of the dominant first-mover is likely to overcome the economic incentive offered by a non-dominant retaliator which receives relatively *less* weight as the non-dominant brand lacks prior favorable cognitions.

The fourth factor (i.e., quality inference of promotion) does not play a role as no negative inference can be drawn against the retaliator as it is a frequent price promoter. Considering that *all three applicable factors favor the dominant first-mover*, I predict:

**H13-A:** Choice share gain made by a dominant first-mover sustains in the event of a price cut by a non-dominant retaliator that has a history of offering frequent price promotions.

**Dominant first-mover, non-dominant brand (rare promoter) retaliates.** In this setting, a dominant brand is not only likely to sustain its first-mover choice share gain, it may also win additional choice share from other non-dominant competing brands.

The dominant brand benefits from both an initial choice preference advantage and an initial evaluation advantage (i.e., pre-trial evaluation gain). Further, the economic incentive offered by a non-dominant brand receives relatively *less* weight as the non-dominant brand lacks prior favorable cognitions.
The fourth factor that influences choice also favors the first-mover. Specifically, the dominant first-mover benefits from the fact that the non-dominant brand (due to consumers’ negative attribution of its rare price cut) is perceived to be of relatively lower quality.

So while initial choice share gain of the dominant brand is retained due to its higher pretrial evaluations, perceptions of the retaliator’s lower quality may further benefit the first-mover’s choice share at the expense of the retaliator. Formally:

**H13-B:** Choice share gain made by a dominant first-mover increases in the event of a price cut by a non-dominant retaliator that has a history of not offering price promotions.

*Non-dominant first-mover, dominant brand (frequent promoter) retaliates.* I propose that a non-dominant brand will not sustain its first-mover choice share gain. In this scenario, consumers do not attribute the price-cut by a dominant brand to a reduction in quality.

When the *price versus trivial attribute* processing happens, the only factor acting in favor of the first-mover is the initial choice preference. Provided the product experience of the brand selected at the first-mover stage is ambiguous, the initial choice preference is likely to reverse as it was not accompanied by an initial evaluation gain. As argued earlier, choice share gain that occurs without a concurrent evaluation gain is not durable.

Further, the strong diagnosticity of favorable cognitions towards the dominant brand makes the economic incentive offered by the dominant brand very attractive. Based on these factors, I predict:

**H14-A:** Choice share gain made by a non-dominant first-mover does not sustain a retaliatory price cut by a dominant retaliator that has a history of offering frequent price promotions.

*Non-dominant first-mover, dominant brand (rare promoter) retaliates.* I propose that a non-dominant brand will sustain its first-mover choice share gain. The initial choice preference
favors the first-mover. However, the initial evaluation advantage and diagnosticity of prior brand cognitions do not favor the first-mover. Regardless of these disadvantages, consumers should infer [based on the rare price cut] that the dominant retaliator has diminished quality.

I propose this happens due to a quality perception spillover effect that occurs between competing brands (Janakiraman, Sismeiro, and Dutta 2009; Roehm and Tybout 2006). Janakiraman, Sismeiro, and Dutta (2009) explain spillover between competing brands using the accessibility diagnosticity framework (Feldman and Lynch 1988). Specifically, they suggest that if a consumer believes that brand X is informative (diagnostic) of brand Y, the perceptions of X’s quality will influence the inferences regarding Y’s quality.

Extending these arguments to the current competitive context, I propose that the negative quality inference of a dominant brand (due to its rare price cut) is likely to be diagnostic of the higher relative quality of the non-dominant brand that launched the trivial attribute. The act of concession (characterized by a rare price cut) by a dominant brand (that is tightly associated with the category) legitimizes the trivial attribute’s introduction and importance. This in turn should results in an inference that the non-dominant first-mover has relatively higher quality. Higher quality perception of the non-dominant brand should help it sustain its first-mover choice share gain. Based on these arguments, I predict:

**H14-B:** Choice share gain made by a non-dominant first-mover sustains a retaliatory price-cut by a dominant retaliator that has a history of not offering price promotions.

*Non-dominant first-mover, another non-dominant brand (frequent promoter) retaliates.* I propose that a non-dominant first-mover will sustain its initial choice share gain. The only factor that is in play in this scenario is the first-mover’s initial choice preference.
The remaining three factors are unlikely to influence choice. First, consumers do not infer the retaliator’s price cut as a signal of lower quality. Second, the diagnosticity associated with prior brand cognitions is neutral as both brands are perceptually non-dominant. Third, the first-mover did not gain evaluation by introducing a trivial attribute.

Hence, if the trivial attribute and the economic incentive (of price-cut) are equivalently attractive, the only applicable factor [i.e., initial choice preference] favors the first-mover. Therefore, I predict that the first-mover will sustain its choice share gain. Formally:

**H15-A**: Choice share gain made by a non-dominant first-mover sustains a price-cut by another non-dominant retaliator that has a history of offering frequent price promotions.

*Non-dominant first-mover, another non-dominant brand (rare promoter) retaliates.* In this setting, I propose that the first-mover may gain additional choice share relative to its first-mover choice share.

As argued in the preceding section, the non-dominant first-mover is expected to sustain its choice share due to an initial choice preference for the first-mover.

I argue that the first-mover will further benefit due to the rare price-cut by the retaliating non-dominant brand. The rare price cut should signal lower relative quality of the retaliator and the first-mover is likely to benefit at the expense of the retaliator. In sum, while initial choice share gain of the first-mover is retained due to its initial choice preference; perceptions of the retaliator’s relatively lower quality may further benefit the first-mover’s choice share at the expense of the retaliator. Formally:

**H15-B**: Choice share gain made by a non-dominant first-mover increases in the event of a price-cut by another non-dominant retaliator that has a history of not offering price promotions.

Figure 4 below summarizes the theoretical framework developed in this section.
Figure 4: Theoretical framework – Sustainability hypotheses (price based retaliation)

<table>
<thead>
<tr>
<th>H</th>
<th>First Mover</th>
<th>Retaliator</th>
<th>Nature of price promoter</th>
<th>Factors favoring choice of first-mover at Retaliation Stage</th>
<th>Does First-mover sustain its choice share gain?</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Initial Choice Share Preference</td>
<td>Initial Evaluation Advantage</td>
</tr>
<tr>
<td>H13A</td>
<td>Dominant</td>
<td>Non-dominant</td>
<td>Frequent</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>H13B</td>
<td>Dominant</td>
<td>Non-dominant</td>
<td>Rare</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>H14A</td>
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<td>Dominant</td>
<td>Frequent</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>H14B</td>
<td>Non-dominant</td>
<td>Dominant</td>
<td>Rare</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>H15A</td>
<td>Non-dominant</td>
<td>Other Non-dominant</td>
<td>Frequent</td>
<td>✓</td>
<td>N/A</td>
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<tr>
<td>H15B</td>
<td>Non-dominant</td>
<td>Other Non-dominant</td>
<td>Rare</td>
<td>✓</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Legend**

- ✓  *Factor favors first-mover*
- ✗  *Factor does not favor first-mover*
- N/A  *Not applicable*
Chapter 7

7. Sustainability of trivial differentiation and product experience

Introducing consumer product experience between the first-mover differentiation stage and the retaliation stage is vital to replicate an actual action-reaction setting of a market place. In a market setting, after the consumers make a choice at the first-mover differentiation stage, they will experience the chosen product before making the next choice. Such an assess-feedback-delay-assess process faithfully reflects a real-life purchase scenario (Vanhouche and van Osselaer 2009) in that consumers evaluate a product, get feedback by trial and after a delay, make the next purchase decision.

It is important to note that the in the context of understanding sustainability of trivial differentiation, consumers’ product experience will be ambiguous. An ambiguous product experience is expected for two reasons.

First, trivial attributes by definition do not provide any observable objective or performance benefit. The benefit implied by a trivial attribute cannot be confirmed or disconfirmed by consuming the product. Hence, ambiguous product experience imitates actual consumption experience of a product with trivial attribute.

Second, prior research demonstrates that a firm’s communication regarding products (as in case of advertising or trivial attributes) has effects on consumers’ perceptions only when consumers experience ambiguous evidence (Ha and Hoch 1989; Hoch and Deighton 1989; Hoch 1989). I do not present any specific hypotheses associated with product experience as (ambiguous) product experience is a common factor across all action-reaction settings.
and Ha 1986). In contrast, if unambiguous evidence regarding product quality is available, decisions are made solely on objective evidence.

To summarize, while examining sustainability of trivial differentiation, it is important to introduce an ambiguous product experience phase between the first-mover differentiation stage and the retaliation stage in order to replicate a real-life purchase setting.
Chapter 8

8. Overview of studies

Results from a pilot study and six experimental studies are reported. An initial pilot study investigated the effect of the differentiating brand’s dominance on the viability of its trivial attribute differentiation strategy. Studies 1A and 1B replicate the findings of the pilot study (using a different operationalization), and also test whether the viability of a trivial attribute differentiation strategy is moderated by category complexity.

Study 2A tests whether the competitive advantage a first-mover gains by launching a trivial attribute holds when a competing brand retaliates with an equally attractive (same or different) trivial attribute. Study 2B examines whether the competitive advantage a first-mover gains by launching a trivial attribute holds when a competing brand retaliates with a more attractive trivial attribute. Study 2C was designed to provide evidence that people engage in the cognitive choice strategies (that I proposed in my theoretical framework) when choosing a brand from a brand attribute matrix.

Finally, study 3 examines whether the competitive advantage a first-mover gains by launching a trivial attribute holds when a competing brand retaliates with a price-cut.
Chapter 9

9. Pilot study: Asymmetric effect of dominance on evaluation and choice

The pilot study investigated whether the viability of a trivial attribute differentiation strategy is affected by the dominance of the differentiating brand. H1 and H4 were tested. It examined the effect of a trivial attribute on the two dependent variables of interest (i.e., evaluation and choice) in conjunction. Understanding the effect on choice and evaluation jointly is important from a sustainability perspective as brands that gain choice share without an increase in evaluation are less likely to sustain such a choice share gain.

9.1. Method

Participants and design. A sample of 90 (Females = 61%) respondents from a survey panel of Qualtrics Inc. (sample characteristics: general US population, ground coffee consumers) participated in an online study for monetary compensation. Only one variable i.e., the differentiating brand was manipulated, resulting in three conditions [dominant vs. non dominant vs. no differentiation/control]. Participants were randomly assigned to one of the three between-subjects conditions.

Stimulus design. Consistent with prior work, a two brand choice set in the ground coffee category similar to the one employed by Brown and Carpenter (2000) was used with one major exception. Instead of hypothetical brands, real brands were used.

A pretest (n = 30) administered on a different sample (derived from the same online panel) identified the dominance of ground coffee brands and the importance of coffee attributes. Eight brands that were listed under the ground-coffee product category of Wal-Mart’s American website were utilized in the pretest. Folgers and Nescafé (that had high awareness, > 90%) but
that were significantly different on dominance were retained as the dominant and non-dominant brands for the study [M\text{Folgers} = 5.99 vs. M\text{Nescafé} = 4.44, p < .01; measured on brand typicality scale adapted from Loken and Ward (1990)]. The details of all measures used in my studies are reported in Appendix 11.

The pretest also identified important and trivial attributes for the study. As in prior work (Carpenter, Glazer, and Nakamoto 1994), a trivial attribute was operationalized as an attribute that was subjectively ambiguous and that was rated as significantly less important than other key attributes. Participants rated a list of attributes on an attribute importance scale (anchored: 1 = not important, 7 = very important) adapted from Brown and Carpenter (2000). Aroma (M = 6.14), Freshness (M = 6.2) and Percentage of premium beans (M = 5.47) were retained as the important attributes. These three attributes were also found to be significantly more important than the trivial attribute i.e., Brazilian high altitude roasting process (M = 3.09, all ps < .001).

Similar to the choice set constructed by Brown and Carpenter (2000), the two competing brands were superior on either freshness or aroma. The coupling of brands (Folgers, Nescafé) and important attributes (aroma, freshness) in the choice sets was counter-balanced. The same trade-off rate was used for important attributes so that the difference in trade-off rates between important attributes did not influence decisions (Simonson and Tversky 1992). The two brands were identical on the third important dimension i.e., percentage of premium beans. Finally, depending on the differentiating brand condition, the trivial attribute was introduced by either Folgers or Nescafé. In the control condition, neither of the two brands introduced a trivial attribute. See appendix 1 for the choice set used in the pilot study.

**Experimental procedure and dependent variables.** Participants were told that they would be evaluating two brands in the ground coffee category. They were next shown the two brand
choice set (presented as a brand-attribute matrix) and were informed that the two brands retailed at an identical price for a 33.9 oz. pack size. Participants then chose one of the two brands. They also provided evaluation ratings for both Folgers and Nescafé on separate single item evaluation scales (anchored: not preferred/highly preferred) adapted from Carpenter, Glazer and Nakamoto (1994). The participants next rated the importance of attributes and reported basic demographics.

9.2. Results

**Folgers and Nescafé brand evaluations.** A MANOVA with Folgers and Nescafé brand evaluations as the dependent variables and the first-mover differentiating brand as the predictor variable revealed a significant effect of differentiating brand on Folgers evaluations, $F(2, 87) = 5.69, p < .01, \eta^2 = .11$, but not on Nescafé’s evaluations, $F(2, 87) = .16, p = .85$. Post-hoc comparisons (Tukey HSD) revealed that Folgers evaluation was significantly higher ($M = 6.46$) when Folgers differentiated than its evaluation in the control condition ($M = 5.61, p < .05$) or its evaluation when Nescafé differentiated ($M_{Nescafé} = 5.47, p < .05$). Nescafé’s evaluation ($M = 4.41$) when it differentiated was not statistically different from its evaluation in the control condition ($M = 4.20$) or from its evaluation when Folgers differentiated ($M = 4.15$) ($p < .85$).

These results support H1. Specifically, when a dominant brand introduces a trivial attribute it is evaluated more favorably. In contrast, a non-dominant brand’s evaluations do not increase when it introduces a trivial attribute. Figure 5 below graphs the evaluation results of the pilot study.
Figure 5: Pilot Study – Evaluations

- Folgers evaluations
- Nescafé evaluations
**Importance of trivial attribute.** I conducted a one way ANOVA with the trivial attribute’s importance as the dependent variable and the differentiating brand as the predictor. The analysis revealed that the trivial attribute was considered more important when it was introduced by Folgers (M = 4.78) than when it was introduced by Nescafé (M = 3.97), F (1, 57) = 4.78, p < .05.

**Folgers and Nescafé choice share.** I found that both Folgers and Nescafé experienced significant choice share gain by introducing a trivial attribute. When Folgers differentiated on a trivial attribute, its choice share (93.1%) was found to be significantly higher than its control choice share (74.1%), \( \chi^2 (1, 60) = 3.86, p < .05, \Phi = .25 \). Similarly, when Nescafé differentiated on a trivial attribute, its choice share (50%) was found to be significantly higher than its control choice share (25.9%), \( \chi^2 (1, 61) = 3.79, p = .06, \Phi = .24 \). Together, these results support H4.

### 9.3. Discussion

The pilot study showed that while both dominant and non-dominant brands gain choice share by introducing a trivial attribute, only dominant brands experience an evaluation gain. These findings provide initial empirical evidence for my arguments [on the asymmetric effect of dominance on choice and evaluation] upon which my larger theoretical framework is built.
Chapter 10

10. Study 1A and 1B - Overview

Study 1A and 1B build on the results of the pilot study. Study 1A examined the impact of a trivial attribute on a differentiating brand’s evaluation, and study 1B examined the impact of a trivial attribute on a differentiating brand’s choice. The objectives of these two (related) studies were three-fold. First, the two studies examined whether the viability of a trivial attribute differentiation is moderated by category complexity. Second, the two studies enhanced the generalizability of the pilot study’s results by ruling out a possible concern that the pilot study’s findings may not be replicable if the operationalization is altered. It is important to note that most studies on trivial differentiation use brand-attribute matrix based operationalizations. Comparing brands [in a matrix format] side by side where comparative brand information is readily available could lead to demand effects as respondents may be able to guess the hypothesis being tested (Sawyer 1975). One way of ruling out such a demand effect explanation is to test stand-alone evaluations [without comparative brand or attribute information] in a between-subjects setting. Towards that end, study 1A examined the effect of trivial attributes on brand evaluations by presenting one brand advertisement at a time using a between-subjects design. Specifically, study 1A examined H1, H2, H3 and H5-A. Study 1B examined the effect of trivial attributes on choice and tested hypotheses H4 and H5-B. Similar to study 1A, study 1B increases the generalizability of the choice-share findings [in the pilot study] by deploying a different operationalization. Instead of making a choice from a brand-attribute matrix, respondents in study 1B evaluate two distinct advertisements and then make a choice. Finally, studies 1A and 1B provides a conceptual replication of the pilot study by employing stimuli from a different product category.
10.1. Pretests

Identification of product categories. A first pretest (n = 39) identified a low complexity and a high complexity category. Respondents in the pretest rated 11 commonly used product categories (such as laptops, refrigerators, toothpaste etc.) on a three item category complexity scale (anchored: easy/difficult to use, few/large number of product features, low/high complexity, adapted from Mukherjee and Hoyer 2001). Based on the pretest, shampoo and SLR (Single Lens Reflex) camera were identified as the low and high complexity categories respectively (M_{Shampoo} = 2.17 vs. M_{Camera} = 5.28, t(38) = 12.3, p < .001.

Identification of dominant and non-dominant brands. I next conducted pretests that identified dominant and non-dominant brands for both shampoos and SLR cameras. Brand dominance was tapped using two separate operationalizations. The first measure was a time latency measure that calculated the average time taken to correctly identify whether a brand belonged to a particular category (Farquhar, Herr, and Fazio 1990; Herr, Farquhar and Fazio 1996). In the second measure, participants provided their perceptions of the differentiating brand’s dominance on a single item (seven-point) scale that gauged how commonly a brand is used in the category (adapted from Ferraro, Bettman and Chartrand 2009). Pantene and Finesse were identified as the dominant and non-dominant brands in the shampoo category, and Canon and Panasonic were identified as the dominant and non-dominant brands in the SLR camera category. Time latency in the first pretest (n = 64) for correctly identifying Pantene as a shampoo brand was significantly faster than the time latency for correctly identifying Finesse as a shampoo brand (M_{Pantene} = 1694 ms vs. M_{Finesse} = 2078 ms), t(86) = 2.58, p < .05. The pretest also revealed that the time latency for correctly identifying Canon as a camera brand was significantly faster than the time latency for correctly identifying Panasonic as a camera brand (M_{Canon} = 1424
ms vs. $M_{Panasonic} = 2290$ ms), $t(103) = 6.06, p < .001$. Two separate pretests (n = 66 for shampoo; n = 64 for camera) that tapped dominance on the Ferraro, Bettman and Chartrand (2009) scale of dominance confirmed that Pantene was more dominant than Finesse ($M_{Pantene} = 6.01$ vs. $M_{Finesse} = 3.36$), $t(65) = 12.3, p < .001$, and Canon was more dominant than Panasonic ($M_{Canon} = 6.62$ vs. $M_{Panasonic} = 3.92$), $t(63) = 17.2, p < .001$. Another pretest (n = 55) confirmed that all brands selected for the study enjoyed high brand awareness (> 88%). The details of brand awareness (for all studies) are reported in appendix 2.

Identification of trivial attributes. A final pretest (n = 63) identified trivial attributes in both the shampoo and the camera category. Specifically, participants rated a list of attributes on an attribute importance scale (anchored: 1 = not important, 7 = very important) adapted from Brown and Carpenter (2000).

Two made-up meaningless attributes that were rated as unimportant i.e., *Yucca Filamentosa extract* in shampoo and *Magnetic dial navigator* in cameras were identified as trivial attributes. In the shampoo category, the trivial attribute *Yucca Filamentosa extract* was rated as significantly less important than an important attribute *cleaning rating* ($M_{Trivial} = 2.58$ vs. $M_{Important} = 5.28$), $t(62) = 9.49, p < .001$. Similarly, in the camera category, the trivial attribute *Magnetic Dial Navigator* was rated as significantly less important than an important attribute, camera resolution ($M_{Trivial} = 3.41$ vs. $M_{Important} = 6.04$), $t(62) = 10.44, p < .001$.

10.2. Study 1A: Viability of trivial differentiation – evaluation

10.2.1. Method

Participants and design. The study design manipulated three factors i.e., the differentiating brand, product category complexity and trivial differentiation. A sample of 295
(Female = 58%, Age = 18.5 years) undergraduate students participated in the study. The study had a 2 (product category: high complexity, low complexity) x 2 (differentiating brand: dominant, non-dominant) x 2 (trivial differentiation: present, absent) between subjects design. Participants were randomly assigned to one of the eight between-subject conditions.

Stimulus design. Two real advertisements (one for shampoo and one for camera) that pretested (n = 63) as being equally attractive (p = .48) on the 4-item, 7-point advertisement attractiveness scale (pleasant–unpleasant, likeable–unlikeable, not irritating–irritating, and interesting–uninteresting, adapted from Chattopadhyay and Basu 1990) were used in the study. Advertisements within each category were identical in layout and image with the exception of the brand name, logo and product features. In the trivial differentiation condition, the trivial attribute *Yucca Filamentosa extract* (in shampoos) and *Magnetic dial navigator* (in cameras) was embedded in the advertisement copy. In the control conditions, generic promotional text (*Improved Formula* in shampoos and *Improved Technology* in cameras) was included in the advertisement copy. See appendix 3 and appendix 4 for the copy of advertisements used in the shampoo and the camera categories respectively.

Experimental procedure and dependent variables. Depending on the treatment condition, participants were informed that they would evaluate a shampoo (or SLR camera) advertisement. Participants reviewed the advertisement and evaluated the differentiating brand on a four item, seven point scale (good–bad, like–dislike, nice – not nice, preferred – not preferred, adapted from Chattopadhyay and Basu 1990). Participants next rated the importance of the trivial attribute on an attribute importance scale (anchored: 1 = not important, 7 = very important) adapted from Brown and Carpenter (2000). Considering that the study involved two distinct categories, participants responded to questions that gauged their category involvement measured
on a three item scale [decision to buy category is important, interested in category products, familiar with category brands] adapted from Van Trijp, Hoyer, and Inman (1996). Participants also provided their perception of liking and dominance of the brands in context. Finally, participants reported their basic demographics and the study concluded.

### 10.2.2. Results

*Differentiating brand’s evaluations.* An ANOVA with brand evaluation as the dependent variable ($\alpha = .93$) and product category, differentiating brand and trivial differentiation as the predictor variables yielded a significant three way interaction F (1, 287) = 4.15, $p < .05$, $\eta^2 = .014$. I conducted follow-up analysis that examined the two product categories separately. The differentiating brand x trivial differentiation interaction was found to be significant only in the shampoo category, F (1, 143) = 3.92, $p < .05$, $\eta^2 = .027$. The nature of this interaction in the low complexity category of shampoos was such that the evaluations of the dominant brand (Pantene) when it differentiated on a trivial attribute (M = 4.87) were higher than its evaluations in the control condition, (M = 4.34), F (1, 143) = 4.16, $p < .05$. In contrast, the evaluations of the non-dominant brand (Finesse) when it differentiated on the trivial attribute (M = 3.77) did not differ from its control evaluations (3.97), F (1, 143) = .58, $p = .44$. Finally, in the high complexity category of digital SLR camera, no such interaction was observed, F (1, 144) = .76, $p = .38$. Together, these findings support H1 and H5-A.

*Importance of trivial attribute.* I next examined whether the variation in the differentiating brands evaluations is affected by the perceived importance of trivial attribute. An ANOVA was conducted in the shampoo category with the trivial attribute’s importance as the dependent variable and the differentiating brand (dominant vs. non-dominant) and trivial
differentiation (present vs. absent) as the two predictors. The ANOVA yielded a marginally significant interaction, \( F(1, 143) = 3.26, p = .07, \eta^2 = .022 \). On further analysis, the pattern of this interaction was similar to the pattern of interaction observed for brand evaluations. Specifically, the trivial attribute *Yucca Filamentosa extract* was perceived as more important when the dominant brand (Pantene) differentiated on a trivial attribute (\( M = 3.78 \)) relative to the control condition, (\( M = 3.02 \)), \( F(1, 143) = 4.24, p < .05 \). In contrast, the importance of the trivial attribute was unaffected when the non-dominant brand (Finesse) differentiated, \( F(1, 143) = .25, p = .61 \).

Bootstrap analyses with 5,000 draws were administered using model 8 of Hayes’ (2013) process macro. I found that an increase in the perceived importance of trivial attribute mediated the increase in the differentiating brand’s evaluations only when the differentiating brand was dominant (\( b = -.104, SE = .074, 95\% CI: -.312, -.0025 \)) but not when the differentiating brand was non-dominant (\( b = .025, SE = .055, 95\% CI: -.055, .189 \)). Together, these results support H2 and H3. The detailed results of study 1A are presented in Table 2 below.
Table 2: Study 1A Results – Brand Evaluations Means, SDs, and Cell Sizes

<table>
<thead>
<tr>
<th>Category</th>
<th>Shampoo</th>
<th>Dominant brand Pantene differentiates</th>
<th>Non-dominant brand Finesse differentiates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trivial attribute</td>
<td>No trivial attribute</td>
<td>Trivial attribute</td>
</tr>
<tr>
<td>Brand Evaluation</td>
<td>4.87 ( .93)</td>
<td>4.34 (1.37)</td>
<td>3.77 (1.26)</td>
</tr>
<tr>
<td>Importance of trivial attribute</td>
<td>3.78 (1.54)</td>
<td>3.02 (1.78)</td>
<td>3.16 (1.63)</td>
</tr>
<tr>
<td>Cell Size</td>
<td>37</td>
<td>37</td>
<td>36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>SLR Camera</th>
<th>Dominant brand Canon differentiates</th>
<th>Non-dominant brand Panasonic differentiates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trivial attribute</td>
<td>No trivial attribute</td>
<td>Trivial attribute</td>
</tr>
<tr>
<td>Brand Evaluation</td>
<td>5.60 ( .93)</td>
<td>5.51 (.95)</td>
<td>4.72 (1.06)</td>
</tr>
<tr>
<td>Importance of trivial attribute</td>
<td>3.41 (1.36)</td>
<td>3.82 (1.59)</td>
<td>3.48 (1.50)</td>
</tr>
<tr>
<td>Cell Size</td>
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<td>38</td>
<td>37</td>
</tr>
</tbody>
</table>
Effect of category involvement. I conducted additional analysis to check if category involvement impacted the brand evaluations findings. An ANOVA with category involvement as the dependent variable and the three manipulated factors (i.e., differentiating brand, trivial differentiation and category complexity) as the independent variables yielded only a main effect of category complexity. Shampoos and cameras differed on category involvement significantly. Participants had a greater involvement with the shampoos category (M = 4.17) than with the SLR camera category (M = 3.69), F (1, 287) = 8.23, p < .01. However, category involvement did not impact brand evaluations significantly (p > .22). Adding category involvement as a covariate in the ANOVA model for brand evaluations (reported in the preceding sections) did not have any significant impact on the findings.

10.3. Study 1B: Viability of trivial differentiation – choice

10.3.1. Method

Participants and design. The study design manipulated two factors: the differentiating brand and the category complexity. A sample of 259 (female = 46%, age = 18.2 years) undergraduate students participated in the study. The study was a 2 (category complexity: high, low) x 3 (differentiating brand: dominant, non-dominant, no-differentiation/control) between subjects design. Participants were randomly assigned to one of the six conditions.

Experimental procedure and dependent variables. Stimuli similar to study 1A were used in study 1B. For each category, pretests (n = 31 for shampoo, n = 32 for camera) identified two sets of equally attractive advertisements (ps > .78). The attractiveness of the advertisements was measured on the Chattopadhyay and Basu (1990) scale detailed above.
Depending on the treatment condition, participants were informed that they would evaluate two shampoo (or camera) advertisements and then choose one of the two brands. All participants reviewed two advertisements: the dominant brand’s ad and the non-dominant brand’s ad. The permutation of advertisements and the differentiating brands that featured in those advertisements were counter-balanced. In the dominant (non-dominant) differentiating brand conditions, the dominant (non-dominant) brand introduced the trivial attribute. In the control condition, neither of the two brands introduced a trivial attribute. See appendix 5 and appendix 6 for the copy of advertisements used in the shampoo and the camera categories respectively.

After evaluating the advertisements, participants selected one of the two brands. They also answered questions that gauged their category involvement (on the same scale detailed in Study 1A) and their thoughts on the study’s objective. Participants reported their basic demographics and the study concluded.

10.3.2. Results

To examine whether dominance of the differentiating brand impacts its choice share, separate chi-square tests were conducted in both shampoo and camera categories. In the low-complexity category of shampoos, both dominant and non-dominant brands gained choice share relative to control when they differentiated with a trivial attribute. Specifically, Pantene’s choice-share when it introduced a trivial attribute (88.4%) was significantly higher than its control choice share (69.8%), $\chi^2 (1, 86) = 4.49, p < .05, \Phi = .23$. Similarly, Finesse’s choice-share when it introduced a trivial attribute (51.1%) was significantly higher than its control choice share (30.2%), $\chi^2 (1, 86) = 3.90, p < .05, \Phi = .21$. 
In contrast, in the high complexity category of SLR cameras, neither the dominant brand nor the non-dominant brand gained choice share. Canon’s choice-share when it introduced a trivial attribute (62.7%) was not significantly different than its control choice share (57.2%), $\chi^2(1, 85) = .28, p = .59$. Similarly, Panasonic’s choice-share when it introduced a trivial attribute (44.4%) was statistically the same as its control choice share (42.8%), $\chi^2(1, 87) = .02, p = .88$. Together, these findings support H4 and H5-B. The detailed results of study 1B are presented in Table 3.
Table 3: Study 1B Results – Choice Shares and Cell Sizes

<table>
<thead>
<tr>
<th>Category</th>
<th>Dominant brand</th>
<th>Non-dominant brand</th>
<th>No brand differentiates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pantene</td>
<td>Finesse</td>
<td></td>
</tr>
<tr>
<td>Shampoo</td>
<td>88.4%</td>
<td>48.9%</td>
<td>69.8%</td>
</tr>
<tr>
<td>Choice Share</td>
<td>11.6%</td>
<td>51.1%</td>
<td>30.2%</td>
</tr>
<tr>
<td>Pantene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choice Share</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finesse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cell Size</td>
<td>43</td>
<td>43</td>
<td>43</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Dominant brand</th>
<th>Non-dominant brand</th>
<th>No brand differentiates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Canon</td>
<td>Panasonic</td>
<td></td>
</tr>
<tr>
<td>SLR Camera</td>
<td>62.7%</td>
<td>55.6%</td>
<td>57.2%</td>
</tr>
<tr>
<td>Choice Share</td>
<td>37.3%</td>
<td>44.4%</td>
<td>42.8%</td>
</tr>
<tr>
<td>Canon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choice Share</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panasonic</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Cell Size</td>
<td>43</td>
<td>45</td>
<td>42</td>
</tr>
</tbody>
</table>
**Effect of category involvement.** I conducted additional analysis to check whether category involvement impacted the likelihood of the differentiating brand being selected. I ran a logistic regression with the “differentiating brand selected” as the dependent variable and three independent variables \{category complexity, dominance of differentiating brand and category involvement\} and their interaction terms. My results revealed that neither category involvement nor any of the associated interaction terms significantly predicted the choice likelihood of the trivially differentiating brand \((p_s > .11)\).

### 10.4. Discussion

The results of studies 1A and 1B provide a replication of the results found in the pilot study using a more conservative design. This rules out possible demand effect concerns associated with the pilot. The results also confirm that while both dominant and non-dominant brands gain choice share by introducing a trivial attribute, only dominant brands experience an evaluation gain. Studies 1A and 1B also demonstrate a boundary condition regarding trivial differentiation’s viability, in that it is effective only in low complexity product categories.
Chapter 11

11. Study 2A: Sustainability of trivial differentiation (against equally attractive trivial attributes)

The objective of study 2A was to examine whether a trivially differentiating brand sustains its first-mover choice-share gain when a competitor retaliates with an equally attractive (same or different) trivial attribute. Hypotheses H6, H7, H8, H9-A, H9-B, H10-A, H10-B, H11-A and H11-B were tested. Six action-reaction scenarios were constructed such that a first-mover brand (dominant or non-dominant) introduced a trivial attribute and a retaliator (dominant or non-dominant) retaliated by introducing the same or different trivial attribute (See figure 6). Study 2A also aimed to generalize the findings of earlier studies in a different decision context [i.e., a different choice set size, as size of the choice set impacts the effectiveness of trivial attribute differentiation (Brown and Carpenter 2000)].

11.1. Method

*Stimulus category and sample.* The product category used for the study was ground coffee. Ground coffee was selected as it is a low-complexity category and has been used in prior work on trivial attributes (Brown and Carpenter 2000). Participants were recruited from an online panel of Qualtrics. We paid Qualtrics $5.85 for each valid response. The profile of the sample was adult ground coffee drinkers that resided in the state of California and had purchased ground coffee within the last six months. The geographical restriction on the sample was imposed to ensure that perceptions of brand dominance were relatively homogeneous for the population from which the sample was derived.
Stimulus design. For the main study, a three brand choice set composed of one dominant brand and two non-dominant brands was constructed. Dominant and non-dominant brands were identified based on two pretests administered to different samples derived from the same population using the procedures outlined in study 1. Folgers was identified as the dominant brand. Melitta and Eight O’Clock were identified as the two non-dominant brands. The time latency pretest of brand dominance (n = 74) revealed that the time taken for correctly identifying Folgers as a coffee brand was significantly faster than the time latency for correctly identifying Melitta as a coffee brand ($M_{\text{Folgers}} = 2561 \text{ ms}$ vs. $M_{\text{Melitta}} = 5569 \text{ ms}$, $p < .01$) or the time latency for correctly identifying Eight O’Clock as a coffee brand ($M_{\text{Folgers}} = 2561 \text{ ms}$ vs. $M_{\text{Eight O’Clock}} = 4169 \text{ ms}$, $p = .01$). A second pretest (n = 43) that tapped dominance on the Ferraro, Bettman and Chartrand (2009) scale of dominance confirmed that Folgers ($M = 6.11$) was significantly more dominant than both Melitta ($M = 3.49$) and Eight O’Clock ($M = 3.86$) (both $ps < .001$). Further, Melitta and Eight O’Clock did not differ significantly on dominance ($p = .17$). Another pretest (n = 50) confirmed that the three brands had relatively high awareness levels (> 70%).

A fourth pretest identified important and trivial attributes from an array of attributes. Three equivalently important coffee attributes: Aroma, freshness and taste rating and two equally important trivial attributes: Brazilian High Altitude Roasting and Patented Caribbean Polishing were identified for the study. The important attributes were rated as significantly more important than the trivial attributes ($M_{\text{Important}} = 5.73$ vs. $M_{\text{Trivial}} = 3.74$, $p < .001$). The two trivial attributes were chosen as they were equivalently important ($M_{\text{Roasting}} = 3.84$ vs. $M_{\text{Polish}} = 3.64$, $p = .40$).

Consistent with prior work on trivial attributes (Carpenter, Glazer, and Nakamoto 1994; Broniarczyk and Gershoff 2003), the brand choice set was created as a brand-attribute matrix.

---

7 The time latency pretests of dominance were found to vary based on the sample type (i.e., undergraduates vs. online panel participants). The average response time of identifying brands correctly was significantly faster for undergraduates than for online panel participants (i.e., Qualtrics, MTurk).
The three brand choice set was so constructed that each of the three brands was slightly superior on \textit{only} one of the three important attributes. Further, similar trade-off rates were used (between brands) for important attributes so that trade-offs between important attributes were less likely to influence choice (Simonson and Tversky 1992). See appendix 7 for the stimulus (brand-attribute matrix) used in Study 2A.

\textit{Participants and design.} Three hundred and ninety seven California based ground coffee consumers (Female = 67\%, Age = 45.1 years) who were members of Qualtrics online panel participated in the study. The study had six between subject treatment groups in which participants performed two sequential choice and evaluation tasks i.e., at the first-mover trivial differentiation stage and at the retaliation stage. There was also an additional control group that was common for all the treatment conditions. Figure 6 below summarizes all the experimental conditions of study 2A.
<table>
<thead>
<tr>
<th>Treatment Condition</th>
<th>Differentiating Brand</th>
<th>Trivial Attribute Introduced</th>
<th>Competing Brand</th>
<th>Trivial Attribute Introduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Folgers</td>
<td>Brazilian High Altitude Roasting</td>
<td>Melitta</td>
<td>Same as First-mover</td>
</tr>
<tr>
<td>2</td>
<td>Melitta</td>
<td></td>
<td>Melitta</td>
<td>Patented Caribbean Polishing</td>
</tr>
<tr>
<td>3</td>
<td>Melitta</td>
<td>Brazilian experience feedback stage</td>
<td>Folgers</td>
<td>Same as First-mover</td>
</tr>
<tr>
<td>4</td>
<td>Melitta</td>
<td></td>
<td>Folgers</td>
<td>Patented Caribbean Polishing</td>
</tr>
<tr>
<td>5</td>
<td>Eight O’Clock</td>
<td></td>
<td>Eight O’Clock</td>
<td>Same as First-mover</td>
</tr>
<tr>
<td>6</td>
<td>Eight O’Clock</td>
<td></td>
<td>Eight O’Clock</td>
<td>Patented Caribbean Polishing</td>
</tr>
<tr>
<td>7</td>
<td>No Innovation (Control)</td>
<td></td>
<td>No Innovation (Control)</td>
<td>Patented Caribbean Polishing</td>
</tr>
</tbody>
</table>

Figure 6: Study 2A – Experimental conditions
In the first two treatment conditions the first-mover dominant brand (Folgers) introduced a trivial attribute the *Brazilian high altitude roasting* process. At the retaliation stage, a non-dominant brand (Melitta) retaliated with either the same trivial attribute or with a different trivial attribute i.e., *Patented Caribbean polishing* process.

In the next four treatment conditions (conditions 3 to 6), a non-dominant brand (Melitta) introduced a trivial attribute *Brazilian High Altitude Roasting* as the first-mover. In treatment conditions 3 and 4, the dominant brand (Folgers) retaliated with the same or different trivial attribute and in treatment conditions 5 and 6, the other non-dominant brand (Eight O’Clock) retaliated with the same or different trivial attribute. Consistent with prior work (Carpenter, Glazer, and Nakamoto 1994), for brands that did not introduce trivial attributes (as first-movers or as retaliators) the roasting process and the polishing process were labeled as *regular*. In the control condition, there was only one (evaluation and choice) stage in which the brand-attribute matrix was composed of the three brands and the three important attributes.

*Experimental procedure and dependent variables.* The main study had three parts. Part 1 was the first-mover differentiation stage, part 2 was the product experience feedback stage and an unrelated filler study and part 3 was the retaliation stage.

During part 1 of the study i.e., the first-mover differentiation stage, participants were asked to imagine that while purchasing items at an online retailer’s website (such as Amazon.com); they decide to order some ground-coffee as they were running short on stock. They were told that they found three brands particularly attractive as these brands had no shipping cost. The three brands were retailing at an identical price for a 33.9 oz. pack size. Participants were further told that they could compare the three brands on different product features using an online comparison tool at the retailer’s website. They were next shown the
three brand choice set (the brand attribute matrix) which was presented as an output of the online comparison tool. Participants were asked to choose one of the three brands. They also evaluated each of the three brands on separate single-item evaluation scales adapted from Carpenter, Glazer, and Nakamoto (1994). Next, participants entered thought protocols in a text box after receiving the following instruction, “Please specify the reason(s) for your brand choice.”

The participants then proceeded to Part 2 of the study in which they were provided with ambiguous product experience feedback. Participants were asked to imagine that their previous ground-coffee purchase was delivered and that they were satisfied with the ground coffee that was delivered. This framing is consistent with ambiguous experience feedback descriptions used in prior work (e.g., Carpenter and Nakamoto 1989). Participants next performed an unrelated task to expel working memory.

Upon completing the filler task, participants proceeded to Part 3 of the study i.e., the retaliation stage. In each of the six treatment conditions, participants were informed that they needed to evaluate an additional scenario related to the ground coffee study. Participants were told that they re-consider purchasing ground coffee at the same online retailer’s website. They next examined the choice set at the retaliation stage (with the same three brands) under the guise that some of the product features may have changed. They evaluated and chose a brand from the modified choice set in which a competing brand retaliated with the same or a different trivial attribute. As in part 1, they were asked to enter the reasons for their brand choice.

The respondents in all conditions proceeded to a screen where they rated the importance of different product attributes on the attribute importance scale detailed earlier. Participants also answered questions that gauged their category involvement, perceptions of brand dominance,
liking and familiarity and whether they had inferred the study’s hypothesis. Finally, participants reported their basic demographics and the study concluded.

### 11.2. Results

**Manipulation checks.** Manipulation checks revealed that Folgers (M = 6.21) was significantly more dominant brand than Melitta (M = 3.63) and Eight O’Clock (M = 3.73), ps < .001. The dominance of Melitta and Eight O’Clock did not differ significantly (p = .44). Further, both trivial attributes Brazilian High Altitude roasting (M = 3.87) and Patented Caribbean polishing (M = 3.52) were rated significantly less important for purchase than the important attributes (M = 6.03), ps < .001).

**First-mover’s brand evaluations.** The first part of the analysis replicated results of prior studies and confirmed the asymmetric effect of dominance on a trivially differentiating brand’s evaluation and choice-share.

A MANOVA with Folgers and Melitta brand evaluations as the dependent variables and the first-mover differentiating brand as the predictor variable revealed a significant effect of differentiating brand on both Folgers evaluations, F (2, 394) = 20.05, p < .001, $\eta^2 = .09$ and Melitta’s evaluations, F (2, 394) = 8.33, p < .001, $\eta^2 = .04$. Post-hoc comparisons (Tukey HSD) revealed a more nuanced pattern consistent with my predictions. When Folgers was a first-mover (i.e., introduced a trivial attribute) its evaluations (M = 6.18) were significantly higher than its evaluations in the control condition (M = 4.95), or its evaluations when Melitta differentiated (M = 5.11) (both ps < .001). In contrast, when Melitta was the first-mover its evaluations (M = 4.34) were not significantly different from its control evaluations (M = 4.07, p = .57). Melitta’s evaluations (M = 4.34) when it was a first-mover were higher than its evaluations when Folgers
was a first-mover (M = 3.49, p < .001). The detailed evaluation results of study 2A are presented in Table 4. The intersection of these results provides additional evidence for H1 i.e., while dominant brands gain evaluations [relative to control] when they introduce a trivial attribute, non-dominant brands do not.

I conducted additional analyses to examine whether the evaluation of the first-mover differentiating brand differed between the first-mover stage and the retaliation stage. First, I conducted a repeated measure ANOVA with Folgers evaluations as the dependent variable and the experimental stage (first-mover versus retaliation stage) as the within subjects factor. The analysis confirmed that there was no difference in Folgers evaluations [when it was the first-mover] between the first-mover stage (M = 6.18) and the retaliation stage (M = 6.16), p > .72.

Next, I conducted a repeated measure ANOVA with Melitta’s brand evaluations as the dependent variable. The experimental stage (first-mover versus retaliation) was included as a within-subjects factor and the retaliator’s brand dominance (dominant versus. non-dominant) was included as the between subjects factor. Neither any interaction effect nor any main effect was observed (ps > .12). In sum, the differentiating brand’s evaluation did not differ between the first-mover stage and the retaliation stage. The evaluation results of Study 2A are presented in Table 4.
Table 4: Study 2A Results – First-mover and Retaliation stage Brand Evaluations

<table>
<thead>
<tr>
<th>Cell</th>
<th>First Mover</th>
<th>Retaliator</th>
<th>Type of retaliation</th>
<th>Cell Size</th>
<th>Brand</th>
<th>First-mover stage Brand Evaluation</th>
<th>Retaliation stage Brand Evaluation</th>
<th>Trivial attribute Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Folgers</td>
<td>Melitta</td>
<td>Same</td>
<td>56</td>
<td>Melitta</td>
<td>3.45 (1.74)</td>
<td>4.06 (1.81)</td>
<td>4.42 (1.67)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Folgers</td>
<td>6.29 (.91)</td>
<td>6.31 (.94)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eight O’Clock</td>
<td>3.60 (1.68)</td>
<td>3.42 (1.69)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Folgers</td>
<td>Melitta</td>
<td>Different</td>
<td>57</td>
<td>Melitta</td>
<td>3.54 (1.58)</td>
<td>3.92 (1.63)</td>
<td>4.49 (1.51)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Folgers</td>
<td>6.08 (1.36)</td>
<td>6.01 (1.23)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eight O’Clock</td>
<td>3.49 (1.53)</td>
<td>3.53 (1.61)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Melitta</td>
<td>Folgers</td>
<td>Same</td>
<td>58</td>
<td>Melitta</td>
<td>4.46 (1.78)</td>
<td>4.49 (1.65)</td>
<td>3.65 (1.76)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Folgers</td>
<td>5.07 (1.77)</td>
<td>5.45 (1.64)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eight O’Clock</td>
<td>3.91 (1.59)</td>
<td>4.19 (1.73)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Melitta</td>
<td>Folgers</td>
<td>Different</td>
<td>57</td>
<td>Melitta</td>
<td>4.31 (2.00)</td>
<td>4.28 (1.83)</td>
<td>3.36 (1.66)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Folgers</td>
<td>5.30 (1.51)</td>
<td>5.62 (1.49)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eight O’Clock</td>
<td>3.79 (1.45)</td>
<td>3.92 (1.48)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Melitta</td>
<td>Eight O’Clock</td>
<td>Same</td>
<td>57</td>
<td>Melitta</td>
<td>4.24 (1.84)</td>
<td>4.45 (1.83)</td>
<td>3.57 (1.79)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Folgers</td>
<td>4.97 (1.67)</td>
<td>4.93 (1.70)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eight O’Clock</td>
<td>3.87 (1.51)</td>
<td>4.30 (1.62)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Melitta</td>
<td>Eight O’Clock</td>
<td>Different</td>
<td>56</td>
<td>Melitta</td>
<td>4.35 (2.01)</td>
<td>4.44 (1.93)</td>
<td>3.80 (1.80)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Folgers</td>
<td>5.11 (1.71)</td>
<td>4.93 (1.79)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eight O’Clock</td>
<td>4.26 (1.55)</td>
<td>4.32 (1.71)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Control condition</td>
<td></td>
<td></td>
<td>56</td>
<td>Melitta</td>
<td>4.07 (1.66)</td>
<td>4.95 (1.89)</td>
<td>3.76 (1.92)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Folgers</td>
<td>4.18 (1.50)</td>
<td>4.18 (1.50)</td>
<td></td>
</tr>
</tbody>
</table>
Importance of Trivial Attribute. I next examined whether the trivial attribute’s importance was affected by the dominance of the trivially differentiating brand. An ANOVA with trivial attribute’s importance rating as the dependent variable and the differentiating brand as the predictor yielded a significant main effect of the differentiating brand, $F(2, 394) = 9.40, p < .001, \eta^2 = .046$. Post-hoc comparisons (Tukey HSD) revealed that the trivial attribute’s importance was significantly greater when Folgers introduced it ($M = 4.46$), than in the control condition ($M = 3.76, p < .05$), or when Melitta introduced it ($M = 3.60, p < .001$). These results replicate prior findings and provide additional support for H2.

First-mover’s Choice Share. To examine how dominance of the trivially differentiating brand impacts its choice share, separate chi-square tests were conducted for both Folgers and Melitta. As predicted in H4, both dominant and non-dominant brands gained choice share when they differentiated with a trivial attribute. Specifically, the dominant brand’s (Folgers) choice-share when it introduced a trivial attribute (82.3%) was significantly higher than its control choice share (58.9%), $\chi^2(1, 169) = 10.7, p < .01, \Phi = .25$. Similarly, the non-dominant brand’s (Melitta) choice-share when it introduced a trivial attribute (39.9%) was significantly higher than its control choice share (17.8%), $\chi^2(1, 284) = 9.54, p < .01, \Phi = .18$. Together, these results provide evidence for H1 and H4 in a different decision context (choice set size).

Sustainability of a dominant brand’s first-mover trivial differentiation strategy. I examined the sustainability of a trivial differentiation strategy by testing whether the choice share a first-mover gains with a trivial attribute holds at the retaliation stage [relative to both (a) its control choice share, and (b) its first-mover choice share].

I first conducted a logistic regression to examine whether the nature of retaliation (i.e., same or different trivial attribute) impacted the selection of the first-mover dominant brand at the
retaliation stage. I found that the type of retaliation (same or different trivial attribute) by the non-dominant brand Melitta had no impact on the odds of Folgers’s selection at the retaliation stage ($B = .13$, Wald = .079, $p = .77$). Hence, I collapsed the treatment conditions 1 and 2 [First-mover: Folgers; Retaliator: Melitta; Retaliation type: same and different trivial attribute] and ran my analysis on the aggregate data. Chi-square tests revealed that Folgers choice share at the retaliation stage (79.6%) did not change relative to its choice share at the first-mover stage (82.3%), $\chi^2 (1, 226) = .25$, $p = .61$, $\Phi = .03$. Importantly, Folgers choice share at the retaliation stage (79.6%) was also significantly greater than its control choice share (58.9%), $\chi^2 (1, 169) = 8.11$, $p < .01$, $\Phi = .21$. Together, these results support H9-A and H9-B. Specifically, a dominant brand holds on to the choice share gain it made as a first-mover trivial differentiator when a non-dominant brand retaliates with an equally attractive (same or different) trivial attribute.

*Sustainability of a non-dominant brand’s first-mover trivial differentiation strategy.* A logistic regression was run with the non-dominant brand Melitta’s selection (at the retaliation stage) as the dependent variable. The retaliating brand (Folgers vs. Eight O’Clock) was the first predictor variable and the retaliation type (same vs. different trivial attribute) was the second predictor variable. The logistic regression only yielded a main effect of retaliating brand ($B = .60$, Wald = 3.98, $p < .05$). No interaction or main effect of retaliation type was observed. Hence the four treatment cells (3 to 6) corresponding to different retaliation types were collapsed at the level of retaliating brand (i.e., Folgers and Eight O’Clock) for subsequent analyses.

Chi-square tests revealed that when Folgers retaliated, Melitta lost the choice share it gained as a first-mover differentiating on a trivial attribute. Specifically, Melitta’s choice share at the retaliation stage (21.7%) was significantly lower than its choice share at the first-mover stage (40.8%), $\chi^2 (1, 230) = 9.78$, $p < .01$, $\Phi = .20$. Also, Melitta’s choice share at the retaliation stage
(21.7%) did not differ significantly from its control choice share (17.8%), $\chi^2 (1, 171) = .34, p = .55, \Phi = .04$.

In contrast when Eight O’Clock retaliated, Melitta sustained the choice share it gained as a first-mover trivial attribute differentiator. Specifically when Eight O’Clock retaliated, Melitta’s choice share at the retaliation stage (33.6%) did not change relative to its choice share at the first-mover stage (38.9%), $\chi^2 (1, 226) = .68, p = .40, \Phi = .05$. Further, Melitta’s choice share at the retaliation stage (33.6%) was also significantly greater than its control choice share (17.8%), $\chi^2 (1, 169) = 4.58, p < .05, \Phi = .16$. Together, these results provide support for hypotheses H10-A, H10-B, H11-A and H11-B.

The choice-share results of study 2A are presented in Table 5. Figure 7 below graphs the results of study 2A.
Table 5: Study 2A Results – First-mover and Retaliation stage Brand Choice Share

<table>
<thead>
<tr>
<th>Treatment Condition</th>
<th>First Mover</th>
<th>Retaliator</th>
<th>Type of retaliation</th>
<th>Cell Size</th>
<th>First-mover Choice share</th>
<th>Retaliation Stage Choice Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Folgers</td>
<td>Melitta</td>
<td>Same</td>
<td>56</td>
<td>Melitta 10.7%, Folgers 82.1%, Eight O’Clock 7.2%</td>
<td>Melitta 12.5%, Folgers 78.6%, Eight O’Clock 8.9%</td>
</tr>
<tr>
<td>2</td>
<td>Folgers</td>
<td>Melitta</td>
<td>Different</td>
<td>57</td>
<td>Melitta 8.8%, Folgers 82.4%, Eight O’Clock 8.8%</td>
<td>Melitta 8.8%, Folgers 80.7%, Eight O’Clock 10.5%</td>
</tr>
<tr>
<td>3</td>
<td>Melitta</td>
<td>Folgers</td>
<td>Same</td>
<td>58</td>
<td>Melitta 39.7%, Folgers 50.0%, Eight O’Clock 10.3%</td>
<td>Melitta 22.4%, Folgers 60.4%, Eight O’Clock 17.2%</td>
</tr>
<tr>
<td>4</td>
<td>Melitta</td>
<td>Folgers</td>
<td>Different</td>
<td>57</td>
<td>Melitta 42.1%, Folgers 50.9%, Eight O’Clock 7.0%</td>
<td>Melitta 21.0%, Folgers 73.7%, Eight O’Clock 5.3%</td>
</tr>
<tr>
<td>5</td>
<td>Melitta</td>
<td>Eight O’Clock</td>
<td>Same</td>
<td>57</td>
<td>Melitta 40.3%, Folgers 47.4%, Eight O’Clock 12.3%</td>
<td>Melitta 35.1%, Folgers 42.1%, Eight O’Clock 22.8%</td>
</tr>
<tr>
<td>6</td>
<td>Melitta</td>
<td>Eight O’Clock</td>
<td>Different</td>
<td>56</td>
<td>Melitta 37.5%, Folgers 53.6%, Eight O’Clock 8.9%</td>
<td>Melitta 32.2%, Folgers 48.2%, Eight O’Clock 19.6%</td>
</tr>
<tr>
<td>7</td>
<td>Control condition</td>
<td></td>
<td></td>
<td>56</td>
<td>Melitta 17.8%, Folgers 58.9%, Eight O’Clock 23.3%</td>
<td></td>
</tr>
</tbody>
</table>
Figure 7: Study 2A – Results

82.3% Folgers choice share when Melitta reacts
79.6% Folgers Control
58.9%
First-mover choice-share
40.8% Melitta's choice share when Eight O'Clock reacts
38.9% Melitta Control
33.6% Melitta's choice share when Folgers reacts
21.7% Melitta Control
17.8%
Analysis of underlying choice strategy. Two independent coders’ blind to the experimental hypotheses classified the thought protocols ($r = .91$) associated with the brand choice criteria at both the first-mover stage and the retaliation stage. The choice strategies at the first-mover stage were classified into three groups i.e., *brand based*, *lexicographic* and *trivial-attribute*. The choice strategies at the retaliation stage were classified into four groups i.e., *brand based*, *lexicographic*, *trivial-attribute* or *relative trivial attribute* processing. Cases where choice strategies could not be deciphered were classified under the label *unclear* and were excluded from further analysis.

A total of 682 protocols (341 each for first-mover and retaliation stages) from six treatment conditions were coded. Of the 341 protocols coded at the first-mover stage, 190 (55.7%) were classified as brand-based, 19 (5.5%) were classified as lexicographic and 94 (27.5%) were classified as trivial attribute based. 38 (11.1%) protocols were classified under the category *unclear*. There was no significant difference in the distribution of the first-mover choice strategies between the differentiating brand conditions. Examples of representative thought protocols for all categories are provided in Appendix 12.

Chi-square tests were performed to analyze whether the choice strategy a participant used at the first-mover stage differed from the choice strategy she used at the retaliation stage. As predicted in H6, I found that a participant that processed by brand at the first-mover stage also made their choice based on brand at the retaliation stage $\chi^2 (1, 682) = 1.9, p = .16$. Specifically, 90.5% (172 of the 190) participants that processed by brand at the first-mover stage adopted the same choice strategy at the retaliation stage. The same pattern was observed for participants that adopted a lexicographic approach at the first-mover stage. Specifically, 89.4% (17) of the 19
participants that engaged in lexicographic processing at the first-mover stage adopted the same choice strategy at the retaliation stage $\chi^2 (1, 682) = .11, p = .73$.

In contrast, if participants engaged in trivial-attribute processing at the first-mover stage, their choice strategy varied based on the nature of the retaliation. If the competitor retaliated with the same trivial attribute, participants no longer engaged in trivial-attribute processing and reverted to brand based or lexicographic processing. In the same trivial attribute retaliation conditions [conditions: 1, 3 and 5], only 8.6% (4) of the 46 participants that processed by trivial attribute at the first-mover stage processed by a trivial attribute at the retaliation stage $\chi^2 (1, 682) = 38.07, p < .001$. The vast majority of participants now adopted a brand-based or a lexicographic choice strategy. A representative thought protocol for this scenario read, “...Folgers is a more well-known brand that I usually buy, and if Folgers and Melitta are both Brazilian roasted then there isn't much of a competition...” In other words, when trivial attribute ceased to be a basis of choice, the criteria of choice shifted to factors such as prior brand cognitions.

In the different trivial attribute retaliation conditions [conditions: 2, 4 and 6], only 14.5% (7) of the 48 participants that processed by trivial attribute at the first-mover stage processed by a singular trivial attribute at the retaliation stage, $\chi^2 (1, 682) = 33.2, p < .001$. The majority 85.4% (41) of the 48 participants that processed by trivial attribute at the first-mover stage now adopted a relative trivial attribute processing strategy, $\chi^2 (1, 682) = .63, p = .42$. Specifically, people tried to infer the relative value of the two trivial attributes.

Representative protocols at the retaliation stage in this scenario read:
Example 1: “...It's a tough call on this one because the Eight O'Clock brand also consists of a step in the preparation process that also might give it some uniqueness. However, I think that the roasting process will impact the flavor more than the polishing process...”

Example 2: “...High Altitude Roasting sounds intriguing. Polishing sounds like something you do to furniture. Not appealing…”

Together, these findings support H7 and H8.

11.3. Discussion

Study 2A demonstrates when and why a brand sustains its first-mover trivial differentiation advantage against competitive retaliation that involves an equally attractive trivial attribute. Specifically, I show that a dominant brand sustains its first-mover choice share gain when it faces retaliation by a non-dominant brand. In contrast, a non-dominant brand loses (sustains) its first-mover choice-share gain when the retaliating brand is a dominant (another non-dominant) brand. Further, by analyzing thought protocols at both the first-mover stage and the retaliation stage, I demonstrate that consumers’ underlying choice strategies are consistent with what I predicted in my theoretical framework.
Chapter 12

12. Study 2B: Sustainability of trivial differentiation (against more attractive trivial attributes)

The objective of study 2B was to examine whether a first-mover sustains the choice share it gained (by differentiating on a trivial attribute), when a competitor retaliates with a more attractive trivial attribute. Hypotheses H9-C, H10-C and H11-C were tested. Three action-reaction scenarios were constructed such that a first-mover (dominant or non-dominant) introduced a trivial attribute and a retaliator (dominant or non-dominant) launched a more attractive trivial attribute.

12.1. Method

Stimulus category and design. The product category used for the study was laundry detergents. For the main study, a three brand choice set (similar to study 2A) was constructed that had one dominant brand and two non-dominant brands. Dominant and non-dominant brands were identified based on two pretests administered to samples derived from the same population using the procedures outlined in study 1. Tide was identified as the dominant brand. Oxi-Clean and Arm & Hammer were identified as the two non-dominant brands. The time latency pretest of brand dominance (n = 75) revealed that the time taken for correctly identifying Tide as a detergent brand was significantly faster than the time taken for correctly identifying OxiClean as a detergent brand ($M_{\text{Tide}} = 1683$ ms vs. $M_{\text{OxiClean}} = 3586$ ms, $p < .001$) or the time taken for correctly identifying Arm & Hammer as a detergent brand ($M_{\text{Tide}} = 1683$ ms vs. $M_{\text{Arm&Hammer}} = 3958$ ms, $p < .001$). A second pretest (n = 50) that tapped dominance on the Ferraro, Bettman and Chartrand (2009) scale of dominance confirmed that Tide (M = 6.56) was significantly more
dominant than both OxiClean (M = 4.82) and Arm & Hammer (M = 5.04) (both ps < .001). Further, OxiClean and Arm & Hammer did not differ significantly on dominance (p = .30). Another pretest (n = 55) confirmed that all three brands enjoyed high awareness levels (> 90%).

A fourth pretest (n = 55) identified important and trivial attributes from an array of attributes using the same procedure as prior studies. One important attribute cleaning rating and two trivial attributes Yucca Filamentosa extract and IE crystals were identified. The important attribute was rated (M = 5.93) as significantly more important than both Yucca Filamentosa extract (M = 2.71) and IE crystals (M = 2.73) (ps < .001). The three brand choice set was so constructed that each of the three brands had an identical rating on the important attribute i.e., cleaning rating. The trivial attribute in the brand-attribute matrix was labeled as extract. The trivial attribute used at the first-mover stage was Yucca Filamentosa extract. To create a more attractive trivial attribute I modified Yucca Filamentosa extract by integrating it with another meaningless attribute (IE Crystals). I labeled the more attractive trivial attribute as Yucca Filamentosa Extract with IE Crystals. A final pretest (n = 56) confirmed that an overwhelming majority of pretest participants selected Yucca Filamentosa extract with IE crystals (80.4%) as more attractive than Yucca Filamentosa extract (19.6%). See appendix 8 for the stimulus (brand-attribute matrix) used in Study 2B.

Participants and design. Participants were recruited from an online panel of M-Turk. The profile of the sample was adult US residents that used laundry detergents. Participants were paid $1 for participation. Two hundred and thirty three MTurk panel members (Female = 44%, Age = 33.6 years) participated in the study. The study had three between subject treatment groups in which participants perform two sequential choice and evaluation tasks i.e., at the first-mover
trivial differentiation stage and at the retaliation stage. There was also an additional control group that was common for all the treatment conditions.

In the first treatment condition, the first-mover dominant brand (Tide) introduced the trivial attribute *Yucca Filamentosa extract*. At the retaliation stage, a non-dominant brand (OxiClean) retaliated with the more attractive trivial attribute *Yucca Filamentosa extract with IE crystals*. In the next two treatment conditions (conditions 2 and 3), a non-dominant brand (OxiClean) introduced the trivial attribute as the first-mover. In treatment condition 2, the dominant brand (Tide) retaliated with the more attractive trivial attribute and in treatment condition 3, the other non-dominant brand (Arm & Hammer) retaliated with the more attractive trivial attribute. Consistent with prior work (Carpenter, Glazer, and Nakamoto 1994), for brands that did not introduce trivial attributes (as first-movers or as retaliators) the extract was labeled as *regular*. In the control condition, there was only one (evaluation and choice) stage in which the brand-attribute matrix was composed of the three brands and the important attribute.

Figure 8 below summarize the experimental conditions of study 2B.
Figure 8: Study 2B – Experimental conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Differentiating Brand</th>
<th>Trivial Attribute Introduced</th>
<th>Competitive Retaliation Stage</th>
<th>Trivial Attribute Introduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tide</td>
<td>Yucca Filamentosa Extract</td>
<td>OxiClean</td>
<td>Yucca Filamentosa Extract</td>
</tr>
<tr>
<td>2</td>
<td>OxiClean</td>
<td></td>
<td>Tide</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>OxiClean</td>
<td></td>
<td>Arm &amp; Hammer</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>No Innovation (Control)</td>
<td></td>
<td>No Innovation (Control)</td>
<td></td>
</tr>
</tbody>
</table>
Experimental procedure and dependent variables. The experimental procedure was identical to study 2A. At the first-mover stage, participants were asked to compare three brands retailing at an identical price on an online retailer’s website (such as Amazon.com). Participants chose one of the three brands, provided evaluation ratings for all three brands and entered thought protocols in a text box (same instructions as in study 2A).

In Part 2 of the study, the ambiguous product experience feedback was provided. Specifically, participants were informed that they were satisfied with the detergent they had purchased at the first-mover stage. Participants then performed an unrelated task that lasted for around three minutes. Upon completing the filler task, participants proceeded to Part 3 of the study i.e., the retaliation stage. At this stage, participants examined the choice set at the retaliation stage (with the same three brands) under the guise that they reconsider purchasing detergent. Participants evaluated and chose a brand from the modified choice set in which the retaliating brand launched the more attractive trivial attribute.

Participants in all conditions proceeded to a final section where they answered questions on attribute importance, category involvement, brand perceptions and basic demographics.

12.2. Results

Manipulation checks. Manipulation checks revealed that Tide (M = 6.58) was significantly more dominant than Arm & Hammer (M = 4.38) and OxiClean (M = 4.26), ps < .001. Further, the dominance of the two non-dominant brands Arm & Hammer and OxiClean did not differ significantly (p = .32). Also, the trivial attributes Yucca Filamentosa extract (M = 2.23) and IE crystal (M = 2.25) were rated significantly less important for purchase than the important attribute (M = 6.17) i.e., cleaning rating (ps < .001).
First-mover’s brand evaluations. A MANOVA with Tide’s and OxiClean’s brand evaluations as the dependent variables and the first-mover differentiating brand as the predictor revealed a significant effect of differentiating brand on Tide’s evaluations, F (2, 230) = 6.15, \( p < .01 \), \( \eta^2 = .05 \), but not on OxiClean’s evaluations, F (2, 230) = 2.08, \( p = .13 \), \( \eta^2 = .01 \). Post-hoc comparisons (Tukey HSD) replicated the prior pattern of findings. When Tide launched a trivial attribute, its evaluations (M = 6.12) were significantly higher than its evaluations in the control condition (M = 5.31), or its evaluations in the condition in which OxiClean differentiated (M = 5.40) (both ps < .01). Post-hoc comparisons also confirmed that OxiClean’s evaluations when it was the first-mover (M = 4.52) were same as its evaluations in the control condition (M = 4.57, \( p = .92 \)). The evaluation results of study 2B are presented in Table 6.
Table 6: Study 2B Results – First-mover and Retaliation stage Brand Evaluations

<table>
<thead>
<tr>
<th>Treatment Condition</th>
<th>First-Mover</th>
<th>Retaliator</th>
<th>Cell size</th>
<th>Brand</th>
<th>First-mover stage Brand Evaluation</th>
<th>Retaliation stage Brand Evaluation</th>
<th>Trivial Attribute Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tide</td>
<td>OxiClean</td>
<td>59</td>
<td>OxiClean</td>
<td>4.03 (1.58)</td>
<td>4.45 (1.68)</td>
<td>2.84 (1.58)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tide</td>
<td>6.12 (1.12)</td>
<td>5.96 (1.23)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Arm &amp; Hammer</td>
<td>4.47 (1.46)</td>
<td>4.36 (1.63)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>OxiClean</td>
<td>Tide</td>
<td>58</td>
<td>OxiClean</td>
<td>4.64 (1.67)</td>
<td>4.52 (1.63)</td>
<td>2.21 (1.58)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tide</td>
<td>5.57 (1.33)</td>
<td>5.89 (1.24)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Arm &amp; Hammer</td>
<td>4.63 (1.49)</td>
<td>4.74 (1.57)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>OxiClean</td>
<td>Arm &amp; Hammer</td>
<td>59</td>
<td>OxiClean</td>
<td>4.41 (1.93)</td>
<td>4.30 (1.85)</td>
<td>1.93 (1.44)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tide</td>
<td>5.23 (1.63)</td>
<td>5.10 (1.72)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Arm &amp; Hammer</td>
<td>4.41 (1.63)</td>
<td>4.70 (1.58)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Control condition</td>
<td>57</td>
<td>OxiClean</td>
<td>4.57 (1.36)</td>
<td>4.30 (1.85)</td>
<td>1.94 (1.32)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tide</td>
<td>5.31 (1.54)</td>
<td>5.10 (1.72)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Arm &amp; Hammer</td>
<td>4.84 (1.53)</td>
<td>4.70 (1.58)</td>
<td></td>
</tr>
</tbody>
</table>
First-mover’s Choice Share. To examine how dominance of the trivially differentiating brand impacts its choice share, separate chi-square tests were conducted for both Tide and OxiClean. Consistent with prior findings, both Tide and OxiClean gained choice share relative to control when they differentiated. Specifically, Tide’s choice-share when it introduced a trivial attribute (77.9%) was significantly higher than its control choice share (54.4%), $\chi^2(1, 116) = 7.22, p < .01, \Phi = .25$. Similarly, OxiClean’s choice-share when it introduced a trivial attribute (39.3%) was significantly higher than its control choice share (19.3%), $\chi^2(1, 174) = 6.97, p < .01, \Phi = .20$. Together, these results replicate the findings of study 2A and provide additional evidence for H1 and H4.

Sustainability of a first-mover’s trivial attribute differentiation strategy. I examined the sustainability of a trivial attribute differentiation strategy by testing whether the choice share a first-mover gains with a trivial attribute holds at the retaliation stage [relative to both (a) its control choice share, and (b) its first-mover choice share].

I found that Tide was able to hold on to its first-mover choice share gain when OxiClean retaliated with a more attractive trivial attribute. Chi-square tests revealed that Tide’s choice share at the retaliation stage (71.2%) did not change significantly relative to its choice share at the first-mover stage (77.9%), $\chi^2(1, 118) = .71, p = .39, \Phi = .07$. Importantly, Tide’s choice share at the retaliation stage (71.2%) was greater than its control choice share (54.4%), $\chi^2(1, 116) = 3.51, p = .06, \Phi = .17$. Together, these results lend support to H9-C. A dominant brand holds on to its first-mover choice share gain when a non-dominant brand retaliates with a more attractive trivial attribute.

In contrast, OxiClean lost the entire choice share it gained as a first-mover when Tide retaliated with a more attractive trivial attribute. Specifically, OxiClean’s choice share at the
retaliation stage (13.8%) was significantly lower than its choice share at the first-mover stage (37.9%), \(\chi^2 (1, 116) = 8.81, p < .01, \Phi = .27\). Also, OxiClean’s choice share at the retaliation stage (13.8%) did not differ significantly from its control choice share (19.3%), \(\chi^2 (1, 115) = .63, p = .42, \Phi = .07\).

OxiClean’s fortunes were just as susceptible to reversal when the non-dominant brand Arm & Hammer retaliated with a more attractive trivial attribute. OxiClean’s choice share at the retaliation stage (20.3%) was significantly lower than its choice share at the first-mover stage (40.7%), \(\chi^2 (1, 118) = 5.75, p < .05, \Phi = .22\). OxiClean’s choice share at the retaliation stage (20.3%) was also the same as its control choice share (19.3%), \(\chi^2 (1, 116) = .02, p = .88, \Phi = .01\).

Based on these findings, H10-C and H11-C are supported. The choice share results of study 2B are presented in Table 7 below. Figure 9 below graphs the results of study 2B.
Table 7: Study 2B Results – First-mover and Retaliation stage Brand Choice Share

<table>
<thead>
<tr>
<th>Treatment Condition</th>
<th>First-Mover</th>
<th>Retaliator</th>
<th>Cell size</th>
<th>First-mover Choice share</th>
<th>Retaliation Stage Choice Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tide</td>
<td>OxiClean</td>
<td>59</td>
<td>OxiClean 10.2% 77.9% Arm &amp; Hammer 11.9%</td>
<td>OxiClean 13.5% Tide 71.2% Arm &amp; Hammer 15.3%</td>
</tr>
<tr>
<td>2</td>
<td>OxiClean</td>
<td>Tide</td>
<td>58</td>
<td>OxiClean 37.9% 46.6% Arm &amp; Hammer 15.5%</td>
<td>OxiClean 13.8% Tide 67.2% Arm &amp; Hammer 19.0%</td>
</tr>
<tr>
<td>3</td>
<td>OxiClean</td>
<td>Arm &amp; Hammer</td>
<td>59</td>
<td>OxiClean 40.7% 44.1% Arm &amp; Hammer 15.2%</td>
<td>OxiClean 20.3% Tide 45.8% Arm &amp; Hammer 33.9%</td>
</tr>
<tr>
<td>4</td>
<td>Control condition</td>
<td>57</td>
<td>OxiClean 19.3% 54.4% Arm &amp; Hammer 26.3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Figure 9: Study 2B – Results

- Tide choice share when OxiClean reacts: 77.9% → 71.2%

- First-mover choice-share:
  - 54.4%
  - 40.7% → 37.9%
  - 19.3%

- OxiClean choice share when Arm & Hammer reacts:
  - OxiClean Control: 20.3%
  - OxiClean Control: 13.8%

- OxiClean choice share when Tide reacts:
  - 13.8%
Analysis of underlying choice strategy. Two independent coders’ blind to the experimental hypotheses classified the thought protocols (r = .67) associated with the brand choice criteria at both the first-mover stage and the retaliation stage. The choice strategies at the first-mover stage were classified in two groups i.e., brand based and trivial attribute based processing. The choice strategies at the retaliation stage were classified in three groups i.e., brand based, trivial-attribute and relative trivial attribute processing. Cases where choice strategies could not be deciphered for either the first-mover stage or the retaliation stage were classified under the label unclear and were excluded from further analysis.

A total of 340 protocols (170 each for first-mover and retaliation stages) from the three treatment conditions were coded. Of the 170 protocols coded at the first-mover stage, 121 (71.1%) were classified as brand-based and 47 (27.7%) were classified as trivial attribute based. Only 2 (1.1%) of the protocols were classified under the category unclear.

Chi-square tests were performed to analyze whether the choice strategy a participant used at the first-mover stage differed from the choice strategy she used at the retaliation stage. As in study 2A, I found that a participant that chose by brand at the first-mover stage also made her choice by brand at the retaliation stage $\chi^2 (1, 340) = 1.35, p = .24$. Specifically, 91.7% (111) of the 121 participants that chose by brand at the first-mover stage adopted the same choice strategy at the retaliation stage.

In contrast, if participants engaged in trivial-attribute processing at the first-mover stage, their choice strategy changed from a singular trivial attribute strategy to a relative trivial attribute processing strategy. Just 4.25% (2 of 47) of the participants that processed by trivial attribute at the first-mover stage processed by a singular trivial attribute at the retaliation stage $\chi^2 (1, 340) = 48.2, p < .001$. The vast majority 89.3% (42 of 47) of the participants that processed
by trivial attribute at the first-mover stage now adopted a *relative trivial attribute* processing strategy $\chi^2 (1, 340) = .38, p = .53$. Specifically, these participants compared the two trivial attributes and tried to infer their relative value. A representative protocol at the retaliation stage in this scenario read, “*Tide has that new feature PLUS another feature, IE Crystals, which tells me they are going the extra mile with their product and outperforming the others*” Together, this analysis lends additional evidence for H6 and H8.

12.3. Discussion

Study 2B examined whether a trivially differentiating brand can sustain its first-mover choice share gain when a retaliator launches a more attractive trivial attribute. I found that a dominant brand sustains its first-mover choice share gain when a non-dominant brand launches a more attractive trivial attribute. In contrast, a non-dominant brand is unable to sustain its first-mover choice share gain when a retaliating brand launches a more attractive trivial attribute regardless of the retaliating brand’s dominance.
Chapter 13

13. Study 2C: Demonstration of underlying choice strategies

Study 2C was designed to provide experimental evidence [beyond the thought protocol analyses] that people engage in the choice strategies that I have proposed in my theoretical framework [when choosing from a brand attribute matrix]. To achieve this, I designed an experiment in which the brand attribute matrices were so manipulated that participants in different experimental conditions were more likely to adopt different choice strategies.

13.1. Study method and predictions

Four distinct types of brand attribute matrices were constructed in the orange juice category. The brand attribute matrices were similar in structure to the matrix used in study 2A. All brand-attribute matrices had three brands. There was one dominant brand (Tropicana) and two non-dominant brands (Oasis and Simply-Orange). The pretests for brand dominance in the orange juice category are detailed in study 3. The matrix had three equivalently important attributes: nutrition rating, taste rating and freshness rating and one trivial attribute: extraction process.

I label the four types of matrices as (a) mixed-trivial, (b) mixed-non-trivial, (c) brand-only and (d) trivial-only. The target brand had the same ratings on the three important attributes and the trivial attribute across all four conditions. For the first three conditions, Oasis was the target brand. For the trivial-only-matrix an unknown brand: Sonera was the target brand. I expand on the rationale for using a different target brand in the trivial-only-matrix below.

The mixed-trivial matrix had the identical structure as the ground coffee matrix of study 2A. Each of the three brands: Tropicana, Oasis and Simply-Orange were rated as being important
on one of the three important attributes. Specifically, Simply-Orange was rated high on nutrition, Tropicana was rated high on taste and Oasis was rated high on freshness. Further, the target brand Oasis had the trivial attribute: Patented Florida extraction while the other two brands had regular extraction. The mixed-trivial matrix served as the *control* matrix in which all three types of processing (brand based, lexicographic and trivial attribute based) were possible as there was variability between brands, important attributes and trivial attributes.

The mixed-non-trivial matrix had the same structure as the mixed-trivial matrix with one exception. All three brands had the trivial attribute: Patented Florida extraction. Hence, in the mixed-non-trivial matrix people could engage only in brand based and lexicographic processing. Trivial attribute processing was not possible as there was no variability on the trivial attribute dimension across the three brands.

The third matrix i.e., the brand only matrix was so constructed that all three brands had identical ratings on the three important attributes as well as the trivial attribute. This restricted the processing type to only brand based processing. Participants could not engage in either lexicographic or trivial attribute processing in this matrix as there was no variability in the ratings of important attributes or trivial attributes across the three brands.

The final matrix was the trivial-only matrix. The matrix was so created that it favored trivial-attribute processing. To achieve that I created a brand attribute matrix in which the likelihood of brand based or lexicographic processing was minimal. To minimize brand based processing, I used three brand names that were equally attractive (Solevita, Sunito and Sonera) but that were not present in the Canadian market. Further, to avoid lexicographic processing, the matrix was so designed that the three brands had identical ratings on the important attributes. The three brands only differed on the trivial attribute. The target brand Sonera had the trivial attribute
Patented Florida extraction while the other two brands Solevita and Sunito had Regular extraction. For comparability, the target brand Sonera had identical ratings (on important attributes and the trivial attribute) as the target brand Oasis had in the previous three conditions. See appendix 9 for the stimuli (brand-attribute matrices of all four choice sets) constructed for study 2C.

I argued earlier that the overall choice share that a brand secures, is an aggregation of the choice share it gains because of (i) prior brand cognitions, (ii) being attractive on an important attribute and (iii) being attractive on a trivial attribute. Proportionally, greater the number of contributing factors for choice, greater should be the choice of a target brand. Given that I theoretically argue and empirically show that trivial attributes lead to a significant choice share increase, I predict that the choice share of the target brand (Oasis) in the mixed-trivial matrix [control condition] should be significantly higher than the choice share of Oasis in (i) the brand-only matrix and (ii) the mixed-non-trivial matrix.

I further predict that the choice share of the target brand in the mixed-trivial matrix will be less than the choice share of the target brand in the trivial-only matrix. This will happen as in the trivial-only matrix, the only factor upon which people can make a choice is the trivial attribute which favors the target brand. This should lead to extremely high choice-share for the target brand in the trivial-only matrix. In contrast, in the mixed-trivial matrix, trivial attribute is only one of the three factors affecting choice. While the trivial attribute favors the target brand, prior brand cognitions and marginal attractiveness on certain important attributes will still continue to drive choice towards other brands in the choice set. Hence, I expect a lower choice share of the target brand in the mixed-trivial matrix relative to its choice share in the trivial-only matrix.
Participants and procedure. One hundred and eighty nine undergraduate students (66% Female, 18.3 years) participated in the study. The study design was a 4 condition between subjects design. The type of brand-attribute matrix was the manipulated variable with four levels [mixed-trivial, mixed-non-trivial, brand-only, and trivial-only]. Participants were asked to choose from three orange juice brands that had different product features. Participants evaluated the brand-attribute matrix and selected one of the three brands. They next provided basic demographic information and the study concluded.

13.2. Results

The choice share of the target brand was the dependent variable. The findings of the study were consistent with my predictions. First, the choice share of the target brand (Oasis) in the mixed-trivial matrix (29.2%) was significantly higher than the target brand’s choice share in the brand-only matrix (6.2%), $\chi^2 (1, 96) = 8.64, p < .01, \Phi = .30$. The choice share of the target brand (Oasis) in the mixed-trivial matrix (29.2%) was also significantly higher than its choice share in the mixed-non-trivial matrix (10.8%), $\chi^2 (1, 94) = 4.87, p < .05, \Phi = .22$.

In my next analysis, I compared the target brand’s choice share in the mixed-trivial matrix to its choice share in the trivial-only matrix. The target brand (Sonera) in the trivial-only matrix secured the bulk of choice share (85.1%). Further, as predicted, the target brand’s choice share in the trivial-only matrix (85.1%) was substantially higher than the target brand’s choice share in the mixed-trivial matrix (29.2%), $\chi^2 (1, 95) = 30.2, p < .001, \Phi = .56$.

The choice share results of study 2C are presented in Table 8 below.
<table>
<thead>
<tr>
<th>Treatment Condition</th>
<th>Type of Processing</th>
<th>Cell size</th>
<th>Choice share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mixed Trivial</td>
<td>48</td>
<td>Simply-Orange 33.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tropicana 37.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oasis 29.2%</td>
</tr>
<tr>
<td>2</td>
<td>Mixed Non-trivial</td>
<td>46</td>
<td>Simply-Orange 37.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tropicana 52.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oasis 10.8%</td>
</tr>
<tr>
<td>3</td>
<td>Brand only</td>
<td>48</td>
<td>Simply-Orange 33.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tropicana 60.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oasis 6.2%</td>
</tr>
<tr>
<td>4</td>
<td>Trivial only</td>
<td>47</td>
<td>Solevita 0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sunito 14.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sonera 85.1%</td>
</tr>
</tbody>
</table>
13.3. Discussion

Study 2C confirmed that people adopt different choice strategies (i.e., brand based, lexicographic and trivial attribute based processing) when choosing from a brand-attribute matrix that has a trivial attribute. These findings provide experimental evidence that people engage in the cognitive choice strategies that I have proposed in my theoretical framework.
Chapter 14

14. Study 3: Sustainability of trivial differentiation (against price-cuts)

The objective of study 3 was to examine whether the choice-share advantage a brand gains by first-mover trivial differentiation is sustainable when a competitor retaliates on an important attribute (i.e., price). Hypotheses H12 to H15 were tested. Six action-reaction scenarios were created such that a first-mover (dominant or non-dominant brand) introduced a trivial attribute and a retaliator (a dominant or non-dominant brand that is either a frequent or rare price promoter) launched a price cut. Unlike study 2, in which participants inferred product experience from experimental instructions, participants (in study 3) inferred the quality of product experience based on an actual product trial. As discussed earlier, introducing product experience in the experimental set-up is important to reflect a real-life purchase scenario in which consumers evaluate a product, get feedback by trial, and after a delay, make the next purchase decision.

14.1. Method

*Stimulus design.* The product category used for study 3 was orange juice. Orange juice was selected as it is a low-complexity category that can also be used to conduct product trials. Further, the taste difference between different juice brands is hard to detect (Tuttle 2012).

Similar to study 2A and study 2B, participants evaluated and selected an orange juice brand from a three brand choice set (presented as a brand attribute matrix). The three brand choice set was composed of one dominant brand and two non-dominant brands. Dominance was identified based on two pretests using the same procedure as in earlier studies. *Tropicana* was identified as the dominant brand and *Simply-Orange* and *Oasis* were identified as the non-
dominant brands. The time latency pretest (n = 40) of dominance revealed that the time latency for correctly identifying Tropicana as an orange juice brand (M = 1615 ms) was significantly faster than the time latency for correctly identifying Simply as an orange juice brand (M = 3172 ms, p < .001), or the time latency for correctly identifying Oasis as an orange juice brand (M = 2607 ms, p < .05). A second pretest (n = 64) that measured dominance on the Ferraro, Bettman and Chartrand (2009) scale (of dominance) confirmed that Tropicana (M = 6.51) was significantly more dominant than both Oasis (M = 5.01) and Simply (M = 5.21) (both ps < .001). Further, Oasis and Simply-Orange did not differ significantly on dominance (p = .49). Another pretest (n = 20) confirmed that the three brands had relatively high awareness levels (> 80%).

A fourth pretest (n = 30) identified a trivial attribute, Patented Florida extraction process. Consistent with prior work on trivial attributes (Broniarczyk and Gershoff 2003) the brand choice set was created as a brand-attribute matrix. The choice set was so constructed that ratings for the three brands were provided on two important attributes [price and calorie count] and the trivial attribute [extraction process]. The pretest confirmed that price (M = 5.47) and calorie count (M = 4.9) were considered as significantly more important than the trivial attribute (M = 3.36) (ps < .001).

Participants and design. Three hundred and seventy undergraduate students (Female = 56%, age = 19.6 years, orange juice drinkers) participated in the study. The study had six between subject treatment groups in which participants performed two sequential choice and evaluation tasks i.e., at the first-mover trivial differentiation stage and at the retaliation stage.

In the first two treatment conditions the first-mover dominant brand, Tropicana, introduced the trivial attribute i.e., Patented Florida extraction process. At the retaliation stage, Oasis (manipulated as either a frequent or a rare price promoter) retaliated with a price cut. In the
next four treatment conditions [3 to 6], the non-dominant brand Oasis introduced the trivial attribute as the first-mover. In treatment conditions 3 and 4, the dominant brand Tropicana retaliated with a price cut and in conditions 5 and 6, Simply-Orange retaliated with the price cut. Depending on the condition, Tropicana and Simply-Orange were described as either frequent or rare price promoters. There was also an additional common control group for all the treatment conditions. Figure 10 summarizes all the experimental conditions of study 3.
Figure 10: Study 3 – Experimental conditions

<table>
<thead>
<tr>
<th>Treatment Condition</th>
<th>Differentiating Brand</th>
<th>Trivial Attribute Introduced</th>
<th>Competitive Retaliation (Price-cut) Stage</th>
<th>Past Promoter Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tropicana</td>
<td>Patented Florida Extraction Process</td>
<td>Oasis</td>
<td>Frequent</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>Oasis</td>
<td>Rare</td>
</tr>
<tr>
<td>3</td>
<td>Oasis</td>
<td>Tropicana</td>
<td>Tropicana</td>
<td>Frequent</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Tropicana</td>
<td>Tropicana</td>
<td>Rare</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Simply</td>
<td>Simply</td>
<td>Frequent</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Simply</td>
<td>Simply</td>
<td>Rare</td>
</tr>
<tr>
<td>7</td>
<td>No Innovation (Control)</td>
<td></td>
<td>No Innovation (Control)</td>
<td></td>
</tr>
</tbody>
</table>
The brand attribute matrix was so constructed that the three brands had identical levels on the calorie count dimension at both the first-mover and the retaliation stages. The extraction process was labeled as *Patented Florida* for the first-mover launching the trivial attribute and as *regular* for brands that did not introduce trivial attributes as first-movers or as retaliators.

At the first-mover stage, the price for all three brands in the brand attribute matrix was identical i.e., $28 for 24 (ten ounce) bottles of orange juice. At the retaliation stage, only the retaliator changed its price from $28 to $24 providing a $4 price promotion. The price at the retaliation stage was determined on the basis of a pretest.

In the pretest (n = 38), participants were shown two hypothetical orange juice brands X and Y selling at an identical price of $28. The only difference between the two brands was that Brand X offered the trivial attribute Patented Florida extraction process. Participants were then told that Brand Y was willing to reduce its price to become more appealing relative to Brand X. They were then asked the price (below $28) of Brand Y at which they would become indifferent between purchasing Brand X and Brand Y (i.e., at what price of Brand Y, do the two brands become equally attractive?). The median price of Brand Y ($24) that made participants indifferent between choosing brand X and brand Y was used as the price of the retaliating brand offering the price promotion. See appendix 10 for the stimulus (brand-attribute matrix) used in Study 3.

*Experimental procedure and dependent variables.* The main study had four parts that took place in a behavioral laboratory in groups of around 15 students at a time. Part 1 was the first-mover differentiation stage. Parts 2 and 3 were the product trial and the retaliation stages respectively. The final part of the study (part 4) was a follow-up conjoint task in which individual price utilities (of each participant) were determined.
During part 1 of the study participants were asked to imagine that while purchasing products at an online retailer’s website (such as Amazon.com), they decided to order a pack of 24 (ten ounce) bottles of orange juice. Participants were next told that they found three brands particularly attractive as these brands did not have any shipping cost. Participants were further told that they could compare the three brands on different product features using an online tool at the website.

They were next shown the three brand choice set that compared the three brands on different features. Participants were asked to choose one of the three brands and provide evaluation ratings for each of the three brands (using the same procedures used in Study 2A and 2B). Participants then entered thought protocols in a text box in response to the following instruction, “Please specify the reason(s) for your brand choice.”

At this point, participants were informed by the lab manager that they could taste the orange juice that they had selected in the choice task. Three identical tumblers of orange juice labeled Tropicana, Oasis and Simply-Orange were available in the lab. All three tumblers contained high quality orange juice of a different juice brand (Minute-Maid) at the same temperature. Participants tasted the orange juice, completed a short filler-task and then proceeded to the next part (part 3) of the study i.e., the retaliation stage.

At the retaliation stage, participants in each of the six treatment conditions were asked to imagine that they re-consider purchasing orange juice at the same website. They were asked to evaluate the same three brands again using the online tool under the guise that some of the features may have changed. Students next examined the modified choice set at the price retaliation stage in which the retaliating brand offered a $4 price promotion.
The status of past promotional activity was manipulated at the retaliation stage. Specifically, in the frequent (rare) promoter condition, participants were informed that “The [Oasis/Tropicana/Simply] brand has a history of frequently (not) offering price cuts”. Further, to make the past promotion status salient in the rare price promoter condition, a note under the choice-set (at the retaliation stage) read, “First time at reduced price!”

As in part 1, participants evaluated and chose a brand from the choice set at the retaliation stage, and entered the reasons (thought protocols) for their brand choice. Participants attributions regarding competitive causes for price cuts were measured on the following two items: (1) Brand A’s price cut is in response to the introduction of the patented extraction process introduced by Brand B and (2) Brand A’s price cut is independent of the action of other brands (anchored: 1 – strongly disagree, 7 = strongly agree). Participants also answered questions that gauged their category involvement and brand perceptions (dominance, liking and familiarity).

Finally, participants reported basic demographics and part 3 of the study concluded.

Follow-up conjoint task. At the end of the main experiment, participants in each treatment condition participated in an additional task to obtain individual level price utilities for all participants. Conjoint analysis is a de-compositional method that estimates the structure of consumers’ preferences given their overall evaluations of a set of multi-attribute alternatives (Green and Srinivasan 1990). Price is included as just another attribute in conjoint analysis. Although multiple variants of conjoint analysis exist, typical applications of conjoint analysis calculate utilities for a few discrete levels of key attributes (Pekelman and Sen 1979).

The objective of obtaining individual level price utilities was to check whether high price sensitivity of a set of respondents moderated the results of study 3. It is possible that participants
with very high price utility drive choice share shifts towards the brand that offers a price discount (Currim, Weinberg, and Wittink 1981).

For the planned conjoint analysis, I used the choice based conjoint software package of Sawtooth. The conjoint trade-offs were based on three features: (a) Price [six levels: $28, $26.6, $25.2, $23.8, $22.4 and $21 corresponding to 0%, 5%, 10%, 15%, 20% and 25% discount], (b) Brand [three levels: Tropicana, Simply and Oasis] and (c) Extraction process [two levels: Patented Florida and Regular]. Participants made twelve trade-off comparison tasks. Based on this conjoint task, I obtained price utility values for each individual. Post the conjoint task, participants were debriefed and the study concluded.

14.2. Results

First-mover’s Choice Share. The pattern observed in Studies 2A and 2B was replicated. To examine how dominance of the trivially differentiating brand impacts its choice share, I conducted separate chi-square tests for both Oasis and Tropicana. Consistent with prior findings, both Oasis and Tropicana gained choice share relative to control when they differentiated with a trivial attribute. Tropicana’s choice-share when it introduced a trivial attribute (71.1%) was significantly higher than its control choice share (53.8%), $\chi^2(1, 156) = 4.58, p < .05, \Phi = .17$. Similarly, Oasis’s choice-share when it introduced a trivial attribute (26.2%) was significantly higher than its control choice share (9.6%), $\chi^2(1, 266) = 6.48, p < .05, \Phi = .15$.

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Choice based conjoint software packages typically use orthogonal factorial designs to reduce the number of trade-off comparison tasks required of respondents to avoid respondent fatigue (Bloch, Brunel, and Arnold 2003; Green and Wind 1975). The conjoint software also computes numerical utilities (or part worth) of each individual attribute level and provides the relative importance of different attributes by computing the attribute utility range.
Sustainability of a dominant brand’s first-mover trivial differentiation strategy. I examined the sustainability of a trivial attribute differentiation strategy by testing whether the choice share a first-mover gains (by launching a trivial attribute) holds at the retaliation stage [relative to both (a) its control choice share, and (b) its first-mover choice share].

I first conducted a logistic regression to examine whether the past promoter status (i.e., frequent or rare price promoter) of the retaliator impacted the selection of the first-mover dominant brand at the retaliation stage. The dependent variable was Tropicana’s choice at the retaliation stage and the predictors included Oasis’s past promoter status, price utility and their interaction term. I only observed a main effect of price utility (B = -.053, Wald = 9.16, \( p < .01 \)). Importantly, no interaction or main effect of Oasis’s past promoter status (frequent or rare price promoter) was observed (B = .13, Wald = .079, \( p = .77 \)). Given that there was no effect of Oasis’s past promoter status, I collapsed treatment conditions 1 and 2 [First-mover: Tropicana; Retaliator: Oasis; Past promoter status: frequent and rare price promoter] and ran my analysis on the aggregate data.

Follow-up chi-square tests revealed that Tropicana was unable to retain its first-mover choice share gain when Oasis retaliated. Tropicana’s choice share at the retaliation stage (34.6%) was significantly lower than its choice share at the first-mover stage (71.1%), \( \chi^2 (1, 208) = 27.8, p < .001 \). Importantly, Tropicana’s choice share at the retaliation stage (34.6%) was also significantly lower than its control choice share (53.8%), \( \chi^2 (1, 156) = 5.29, p < .05 \). These results do not support either H13-A or H13-B. A dominant brand loses the choice share gain it made as a first-mover (trivial attribute differentiator) when a non-dominant brand retaliates with a price cut [regardless of the non-dominant brand’s past promoter status].
Sustainability of a non-dominant brand’s first-mover trivial differentiation strategy. A logistic regression was run with the non-dominant brand Oasis’s selection (at the retaliation stage) as the dependent variable. The retaliating brand (Tropicana vs. Simply-Orange) was the first predictor, the past promoter status of the retaliator (frequent vs. rare price promoter) was the second predictor and the respondent’s price utility was the third predictor. The interaction between the retaliating brand and the retaliator’s past promotional status was also included in the model. The logistic regression only yielded a main effect of retaliating brand ($B = -2.03$, Wald = 3.48, $p = .06$). None of the other effects were significant. Hence, the four treatment cells (3 to 6) corresponding to different retaliation types were collapsed at the level of retaliating brand (i.e., Tropicana and Simply-Orange) for subsequent analyses.

Chi-square tests revealed that when the dominant brand Tropicana retaliated with a price-cut, Oasis’s choice share was almost completely washed away. Specifically, Oasis’s choice share at the retaliation stage (0.92%) was significantly lower than its choice share at the first-mover stage (22.2%), $\chi^2 (1, 216) = 23.93$, $p < .001$. Oasis’s choice share at the retaliation stage (0.92%) was also significantly lower than its control choice share (9.61%), $\chi^2 (1, 160) = 7.34$, $p < .01$. These findings support H14-A. However, H14-B was not supported.

When the non-dominant brand Simply-Orange retaliated, Oasis still could not sustain its first-mover choice share gain. Oasis’s loss of choice share in this scenario was less severe than its loss of choice share when Tropicana retaliated. When Simply-Orange retaliated, Oasis’s choice share at the retaliation stage (10.4%) was significantly lower than its choice share at the first-mover stage (30.2%), $\chi^2 (1, 212) = 12.86$, $p < .001$. However, Oasis’s choice share at the retaliation stage (10.4%) was not significantly different from its control choice share (9.61%), $\chi^2 (1, 158) = .02$, $p = .88$. 
In sum, a non-dominant brand loses the choice share gain it made as a first-mover trivial attribute differentiator when a competitor retaliates with a price cut [regardless of the retaliator’s dominance or the retaliator’s past price-promotional activity]. Based on these results, H15-A and H15-B were not supported. The choice share results of study 3 are presented in table 9 below. Figure 11 below graphs the results of study 3.

Additional analysis of follow-up conjoint task. The follow-up conjoint analysis revealed that at an aggregate level, price (62%) had a higher utility for participants than brand (30%) and extraction process (8%). The cell-wise price utilities for the participants that switched their choice from the first-mover (trivial differentiator) to the retaliator offering price cut are presented in table 10 below.

As expected, people who did not switch (48.9) from the first-mover to the retaliator had a lower price utility than people who switched (74.8), F (1, 128) = 67.4, p < .001, η² = .34. The only notable finding from the conjoint task was that people who switched from the dominant first-mover to the non-dominant retaliator had a greater price utility (79.9) than (a) the people who switched from the non-dominant first-mover to the dominant retaliator (71.2) or (b) the people who switched from the non-dominant first-mover to the non-dominant retaliator (69.7), (both ps < .05).
Table 9: Study 3 Results – First-mover and Retaliation stage

<table>
<thead>
<tr>
<th>Treatment Condition</th>
<th>First Mover</th>
<th>Retaliator</th>
<th>Price promoter</th>
<th>Cell Size</th>
<th>First-mover Choice Share</th>
<th>Retaliation Stage Choice Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tropicana</td>
<td>Oasis</td>
<td>Frequent</td>
<td>52</td>
<td>Oasis 1.9% Tropicana 73.1% Simply 25.0%</td>
<td>Oasis 55.8% Tropicana 32.7% Simply 11.5%</td>
</tr>
<tr>
<td>2</td>
<td>Tropicana</td>
<td>Oasis</td>
<td>Rare</td>
<td>52</td>
<td>Oasis 5.7% Tropicana 69.3% Simply 25.0%</td>
<td>Oasis 42.3% Tropicana 36.5% Simply 21.2%</td>
</tr>
<tr>
<td>3</td>
<td>Oasis</td>
<td>Tropicana</td>
<td>Frequent</td>
<td>53</td>
<td>Oasis 13.2% Tropicana 54.7% Simply 32.1%</td>
<td>Oasis 0.0% Tropicana 86.8% Simply 13.2%</td>
</tr>
<tr>
<td>4</td>
<td>Oasis</td>
<td>Tropicana</td>
<td>Rare</td>
<td>55</td>
<td>Oasis 30.9% Tropicana 49.1% Simply 20.0%</td>
<td>Oasis 1.8% Tropicana 89.1% Simply 9.1%</td>
</tr>
<tr>
<td>5</td>
<td>Oasis</td>
<td>Simply</td>
<td>Frequent</td>
<td>53</td>
<td>Oasis 32.1% Tropicana 45.3% Simply 22.6%</td>
<td>Oasis 7.5% Tropicana 20.8% Simply 71.7%</td>
</tr>
<tr>
<td>6</td>
<td>Oasis</td>
<td>Simply</td>
<td>Rare</td>
<td>53</td>
<td>Oasis 28.3% Tropicana 45.3% Simply 26.4%</td>
<td>Oasis 13.2% Tropicana 24.5% Simply 62.3%</td>
</tr>
<tr>
<td>7</td>
<td>Control condition</td>
<td></td>
<td></td>
<td>52</td>
<td>Oasis 9.6% Tropicana 53.8% Simply 36.6%</td>
<td></td>
</tr>
</tbody>
</table>
Figure 11: Study 3 – Results

- **Tropicana choice share when Oasis reacts**
  - First-mover choice-share
    - 71.1%
    - 53.8%
    - 30.2%
    - 22.2%
    - 9.6%
  - Retaliation stage
  - Tropicana Control

- **Oasis choice share when Simply reacts**
  - First-mover stage
    - 34.6%
  - Oasis Control

- **Oasis choice share when Tropicana reacts**
  - First-mover stage
    - 10.4%
    - 0.9%
Table 10: Study 3 – Price Utility across different treatment conditions

<table>
<thead>
<tr>
<th>First-mover</th>
<th>Retaliator</th>
<th>Price utility of people who switched from trivially differentiating first-mover to the retaliator offering price cut</th>
<th>Price utility of people who did not switch from trivially differentiating first-mover to the retaliator offering price cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant</td>
<td>Non-dominant</td>
<td>79.9</td>
<td>46.7</td>
</tr>
<tr>
<td>Non-dominant</td>
<td>Dominant</td>
<td>71.2</td>
<td>-</td>
</tr>
<tr>
<td>Non-dominant</td>
<td>Other non-dominant</td>
<td>69.7</td>
<td>56.7</td>
</tr>
</tbody>
</table>
Analysis of underlying choice strategy. Two independent coders blind to the experimental hypotheses classified the thought protocols \((r = .88)\) associated with the brand choice criteria at both the first-mover stage and the retaliation stage. The choice strategies at the first-mover stage were classified in two groups i.e., *brand based* and *trivial attribute based* processing. The choice strategies at the retaliation stage were classified in four groups i.e., (a) *brand based* [choice was made based on brand alone], (b) *price based* (lexicographic) [choice was made based on price alone], (c) *joint brand-price* [choice made on majority of confirming dimensions i.e., preferred brand was on discount] processing, (d) *price versus trivial attribute* processing [choice made after comparison of trivial attribute and price]. Cases where choice strategies could not be deciphered for either the first-mover stage or the retaliation stage were classified under the label *unclear* and were excluded from analysis.

A total of 636 protocols (318 each for first-mover and retaliation stages) from the six treatment conditions were coded. Of the 318 protocols coded at the first-mover stage, 225 (70.7\%) were classified as brand-based and 83 (26.1\%) were classified as trivial attribute based. Around 10 (3.1\%) of the protocols were classified under the category *unclear*.

Chi-square tests were performed to analyze whether the choice strategy a participant used at the first-mover stage differed from the choice strategy she used at the retaliation stage. Contrary to my prediction in H12-A, I found that if a participant processed on brand at the first-mover stage; she did not necessarily process by brand at the retaliation stage. Specifically, only 36\% (81) of the 225 participants that processed by brand at the first-mover stage adopted the same choice strategy at the retaliation stage \(\chi^2 (1, 450) = 211.7, p < .001\). A large proportion of such participants 39.5\% (89 of 225) now adopted a simple *price-based* lexicographic strategy and 20\% (45 of 225) chose the brand based on *joint brand-price* criteria. Under the latter choice
strategy (i.e., joint brand-price), participants chose based on the majority of confirming dimensions. Specifically, they chose a brand as it was (a) their preferred brand and (b) it was also on discount.

If participants engaged in trivial-attribute processing at the first-mover stage, their choice strategy largely changed to price versus trivial attribute processing. As predicted in H12-B, a majority of participants 72.3% (60 of 83) that processed by trivial attribute at the first-mover stage, now engaged in price versus trivial attribute processing. In such a processing, participants engaged in a trade-off between their value inference of the trivial attribute and their value inference of the price differential between brands. To illustrate, a representative protocol at the retaliation stage in this scenario read, “…It still has the extraction method that the other two do not have, the price change was not enough to make me choose the Simply Orange but it still made it more appealing …” However, this percentage (72.3%) although high was statistically lower than the predicted percentage (100%) of price versus trivial attribute processers, $\chi^2 (1, 166) = 26.6, p < .001$. Hence, formally H12-B is not supported. Most of the balance participants, 22.9% (19 of 83) now adopted a simple price-based lexicographic strategy.

**Do trivial attributes play any role when competitors retaliate with price cuts?** Our results so far paint a bleak picture of the advantage trivial attributes provide to first-mover brands when competitors retaliate with price cuts. However, as the thought protocols indicate, the first-mover’s loss of choice share happens due to switching from both (a) consumers that chose based on brand and (b) consumers that chose based on a trivial attribute.

Hence, to analyze whether trivial attributes salvaged some choice share for the first-movers, I conducted additional analyses on only those participants that engaged in trivial attribute processing at the first-mover stage. My dependent variable for these analyses was the
relative level of choice-share loss. Specifically, I conducted two logistical regression analyses using Firth penalized-likelihood estimates. I used this variation of logistic regression as the sub-samples I analyzed had relatively small sample-size and the issue of one zero-cell.

In my first analysis, I examined whether the dominance of the first-mover introducing the trivial attribute impacts its choice-share loss at the retaliation stage. I examined participants (n = 58) that engaged in trivial attribute processing at the first-mover stage in treatment cells 1 to 4 (i.e., First-mover: Dominant vs. Non-dominant, Retaliator: Non-dominant vs. Dominant). The dependent variable in this logistic regression was whether the target brand [that was chosen at the first-mover stage] was also chosen at the retaliation stage. The predictors were the dominance of first-mover brand (dominant vs. non-dominant) and the price utility of the participant. The regression yielded a significant main effect of the first-mover brand (B = 5.96, Wald = 5.47, p < .05) and a marginally significant interaction (B = .13, Wald = 3.25, p = .07). Follow-up tests revealed that if Tropicana (Oasis) was chosen based on a trivial attribute at the first-mover stage, it was more (less) likely to be chosen again. Specifically, 31.4% of the people (11 of 35) who chose Tropicana at the first-mover stage (based on a trivial attribute) stayed with Tropicana even when Oasis retaliated with a price cut. This was starkly different from Oasis’s fate. Zero percent (0 of 23) of those who chose Oasis at the first-mover stage (based on a trivial attribute) stayed with Oasis when Tropicana retaliated with a price cut. This difference in choice-share of Tropicana and Oasis at the retaliation stage was significantly different $\chi^2(1, 58) = 8.92, p < .01$.

In my second analysis, I examined whether the dominance of the retaliating brand predicts Oasis’s choice share loss at the retaliation stage. For this analysis, I examined participants (n = 46) that engaged in trivial attribute processing at the first-mover stage in treatment cells 3 to 6 (i.e., First-mover: Oasis, Retaliator: Tropicana vs. Simply-Orange).
The dependent variable in this logistic regression was whether Oasis [that was chosen at the first-mover stage] was also chosen at the retaliation stage. The predictors were the type of retaliating brand and the price utility of the participant. The regression yielded a significant main effect of the retaliating brand (B = 1.8, Wald = 4.69, p < .05) and a significant main effect of price utility (B = .06, Wald = 4.44, p < .05). Follow-up tests revealed that if Oasis was chosen based on a trivial attribute at the first-mover stage, it was more (less) likely to be chosen again when Simply-Orange (Tropicana) retaliated with a price cut. Specifically, 34.7% of the people (8 of 23) who chose Oasis at the first-mover stage (based on a trivial attribute) stayed with Oasis when the non-dominant brand (Simply) retaliated with a price cut. In contrast, 0% (0 of 23) of those who chose Oasis at the first-mover stage (based on a trivial attribute) stayed with Oasis when Tropicana retaliated with a price cut. This difference in the choice-share of Oasis (at the retaliation stage) when (a) Simply-Orange retaliated versus when (b) Tropicana retaliated was significantly different $\chi^2 (1, 46) = 9.68, p < .01$.

This additional analysis displays a pattern similar to prior findings (particularly study 2A). Unlike study 2A, trivial attributes were unable to prevent a loss of choice-share for first-movers. However, the degree of relative loss displayed a similar pattern. Specifically, trivial attributes helped dominant brands salvage some choice share when faced with price-retaliation from non-dominant brands. In contrast, trivial attributes did not help non-dominant brands salvage any choice share when faced with price-retaliation from dominant brands. Finally, trivial attributes helped non-dominant brands salvage some choice share when faced with price-retaliation from other non-dominant brands.

The results of the follow-up analysis conducted for study 3 are graphed in figure 12 below.
Figure 12: Study 3 – Results of follow-up analysis

Percentage retention of participants that choose based on trivial attribute at first-mover stage

Percentage Retention

- Tropicana First-mover
- Oasis Retaliates [31.4%]
- Oasis First-mover
- Tropicana Retaliates [0%]
- Oasis First-mover
- Simply Retaliates [34.7%]
14.3. Discussion

Study 3 examined whether a trivially differentiating brand can sustain its first-mover choice share gain when a competing brand launches a retaliatory price cut. Contrary to my predictions, I found that trivial attributes are unable to sustain first-mover choice-share gain for any type of brands against retaliatory price cuts. At an aggregate level, price-cuts made trivial attributes of little use. However, additional analysis confirmed that although trivial attributes failed against price-cuts, the relative degree of failure varied across different action-reaction settings. The pattern of the degree of failure was remarkably consistent to earlier findings. Specifically, trivial attributes helped dominant brands salvage at least some choice share when faced with retaliation from non-dominant brands. In contrast, trivial attributes did not help non-dominant brands salvage any choice share when faced with retaliation from dominant brands. Finally, trivial attributes helped non-dominant brands salvage some choice share when faced with retaliation from other non-dominant brands.

Another finding of study 3 was the lack of any effect of the retaliator’s price promoter status. I speculate that this may have happened as prior category beliefs (regarding price-promotion activity in the orange juice category) may have over-ridden the information that was provided regarding the retaliator’s price promotion behavior. In other words, if participants felt that orange juice as a category has frequent price promotions by all brands; they would have discounted the price-promotion information provided regarding the retaliators in the rare price promoter conditions (i.e., the rare promoter manipulation may not have worked as intended).
Chapter 15

15. General discussion

15.1. Theoretical contributions

My dissertation impacts several domains of marketing and management that include literatures on (a) trivial attributes, (b) competition, (c) differentiation and (d) consumer choice and decision making. I next discuss the impact of my dissertation’s findings on each of these literatures.

Contribution to trivial attributes literature

I add to the trivial attributes literature by examining whether the competitive advantage provided by trivial attributes is sustainable. This question is critical as trivial attributes are easy for competitors to create or copy. Hence, if any advantage such attributes provide is easily reversible, why would brands bother to launch trivial attributes? My dissertation answers this question.

I find that the competitive advantage trivial attributes provide to dominant brands is sustainable in the event of competitive retaliation by non-dominant brands. In contrast, the competitive advantage that trivial attributes provide to non-dominant brands is reversible when a dominant brand retaliates with any trivial attribute. Further, a non-dominant first-mover is able (unable) to sustain its competitive advantage when a competing non-dominant brand launches an equally (more) attractive trivial attribute. Crucially, I find that the major reason why dominant and non-dominant first-movers fare differently when faced with competitive retaliation is due to the asymmetric manner in which evaluation and choice processes vary for these brands. Trivial attribute differentiation for dominant brands is more durable as it involves concurrent choice-share and evaluation gain. Finally, I find that trivial attributes are unable to sustain first-mover
choice-share gain [for any type of brands] against retaliatory price cuts. I present a summary score-card of all the hypotheses I test in my dissertation in table 11. See table 11 below.
Table 11: Study 3 – Summary score-card of hypotheses tested

<table>
<thead>
<tr>
<th>H #</th>
<th>Viability hypotheses on evaluation and choice-share</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A dominant (non-dominant) brand’s evaluation increases (does not change) when it introduces a trivial attribute.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>A trivial attribute is rated more (less) favorably when a dominant (non-dominant) brand introduces it.</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>A dominant brand’s evaluation increase is mediated by an increase in the evaluation of the trivial attribute it introduced.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>A brand gains choice share by introducing a trivial attribute, regardless of its dominance.</td>
<td>Yes</td>
</tr>
<tr>
<td>5-A</td>
<td>Trivial attributes positively impact (do not impact) a dominant brand’s evaluation in low complexity (high complexity) product categories.</td>
<td>Yes</td>
</tr>
<tr>
<td>5-B</td>
<td>Trivial attributes positively impact (do not impact) differentiating brands’ choice share in low complexity (high complexity) product categories.</td>
<td>Yes</td>
</tr>
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**Hypotheses on cognitive choice strategies**

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<tr>
<td>6</td>
<td>If brand based or lexicographic processing mode is used for choice at the first-mover stage, the choice strategy will remain consistent at the retaliation stage.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>If a trivial attribute processing strategy is adopted for choice at the first-mover stage and if a competitor retaliates with the same trivial attribute, the choice strategy will change to either a brand based or a lexicographic strategy.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>If a trivial attribute processing strategy is adopted for choice at the first-mover stage and if a competitor retaliates with a different trivial attribute, the choice strategy will change to relative trivial attribute processing.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>12-A</td>
<td>If brand based choice strategy is used at the first-mover stage, the choice strategy will remain the same at the price-retaliation stage.</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>12-B</td>
<td>If trivial attribute processing is used at the first-mover stage, then a comparison between the perceived value of the trivial attribute and the price-cut will occur at the price-retaliation stage.</td>
<td>No</td>
<td></td>
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**Sustainability hypotheses:**

**First-mover: Dominant, Retaliator: Non-dominant, Retaliation type: trivial attribute**

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<tbody>
<tr>
<td>9-A</td>
<td>Choice share gain made by a first-mover dominant brand sustains in the event of retaliation by a non-dominant brand that launches the same trivial attribute.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>9-B</td>
<td>Choice share gain made by a first-mover dominant brand sustains in the event of retaliation by a non-dominant brand that launches a different (equally attractive) trivial attribute.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>9-C</td>
<td>Choice share gain made by a first-mover dominant brand sustains in the event of retaliation by a non-dominant brand that launches a different (more attractive) trivial attribute.</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

**Sustainability hypotheses:**

**First-mover: Non-dominant, Retaliator: Dominant, Retaliation type: trivial attribute**

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<tbody>
<tr>
<td>10-A</td>
<td>A first-mover non-dominant brand loses choice share in the event of retaliation by a dominant brand that launches the same trivial attribute.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>10-B</td>
<td>A first-mover non-dominant brand loses choice share in the event of retaliation by a dominant brand that launches a different (equally attractive) trivial attribute.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>10-C</td>
<td>A first-mover non-dominant brand loses choice share in the event of retaliation by a dominant brand that launches a different (more attractive) trivial attribute.</td>
<td>Yes</td>
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<tr>
<td>Sustainability hypotheses:</td>
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<tr>
<td><strong>First-mover: Non-dominant, Retaliator: Non-dominant, Retaliation type: trivial attribute</strong></td>
<td></td>
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</tr>
<tr>
<td>11-A Choice share gain made by a first-mover non-dominant brand sustains in the event of retaliation by another non-dominant brand that launches the same trivial attribute.</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-B Choice share gain made by a first-mover non-dominant brand sustains in the event of retaliation by another non-dominant brand that launches a different (equally attractive) trivial attribute.</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-C A first-mover non-dominant brand loses choice share in the event of retaliation by another non-dominant brand that retaliates with a different (more attractive) trivial attribute.</td>
<td>Yes</td>
<td></td>
<td></td>
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<tr>
<td><strong>Sustainability hypotheses:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>First-mover: Dominant, Retaliator: Non-dominant, Retaliation type: price cut</strong></td>
<td></td>
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<tr>
<td>13-A Choice share gain made by a dominant first-mover sustains in the event of a price-cut by a non-dominant retaliator that has a history of offering frequent price promotions.</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-B Choice share gain made by dominant first-mover increases in the event of a price-cut by a non-dominant retaliator that has a history of not offering price promotions.</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sustainability hypotheses:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>First-mover: Non-dominant, Retaliator: Dominant, Retaliation type: price cut</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-A Choice share gain made by a non-dominant first-mover does not sustain a retaliatory price-cut by a dominant retaliator that has a history of offering frequent price promotions.</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-B Choice share gain made by a non-dominant first-mover sustains a retaliatory price-cut by a dominant retaliator that has a history of not offering price promotions.</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sustainability hypotheses:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>First-mover: Non-dominant, Retaliator: Non-dominant, Retaliation type: price cut</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-A Choice share gain made by a non-dominant first-mover sustains a price-cut by another non-dominant retaliator that has a history of offering frequent price promotions.</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-B Choice share gain made by non-dominant first-mover increases in the event of a price-cut by another non-dominant retaliator that has a history of not offering price promotions.</td>
<td>No</td>
<td></td>
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</table>
My dissertation lends insight on the type of categories in which trivial attributes are more likely to be effective. I find that trivial attributes provide competitive advantage to differentiating brands only in low complexity categories. However, the inferences on the moderating effect of category complexity should be interpreted with caution as I did not use multiple category replicates in Study 1. Cameras and shampoos [though different on complexity] may vary on other factors such as purchase risk, purchase frequency, level of hedonism (utilitarianism), difficulty of purchase decision, and the nature of the product (consumable versus. durable). Future replications across multiple categories are warranted to rule out confounds, and confirm the moderating effect of category complexity on the viability of trivial attribute differentiation.

This however does not take away the relevance of my findings especially in frequently purchased low-cost consumer goods where (a) products have relatively little variation in quality on important attributes, (b) innovation on important attributes is rare and (c) price-promotions are commonly offered by most brands. In such categories, trivial attributes seem to be a promising approach not only to draw market share from competition but also to hold on to any increased market share over time. Typical examples of such categories include packaged food, beverages, personal care and home care products.

However, the implications of my findings go beyond everyday grocery products. A classic example of a trivial attribute’s wide-spread success in the recent years has been high-octane gasoline. The American Government’s Federal Trade Commission’s website is vocal and direct in its warning. FTC’s warning reads: “…Unless your engine is knocking, buying higher octane gasoline is a waste of money. It may seem like buying higher octane “premium” gas is like giving your car a treat, or boosting its performance. But take note: the recommended gasoline for most cars is regular octane…” (Federal Trade Commission 2012). However,
millions of people continue to buy high-octane gas that does not provide any objective benefit. Finally, although many of the categories I highlight are relatively inexpensive and frequently bought, I argue that my findings would apply to other less frequently bought low-complexity categories such as refrigerators, mattresses and high-end fragrances.

Although, I did not have any a priori hypotheses on the role of category involvement, I analyzed its impact on my effects. Category involvement did not impact my results in Studies 1A and 1B. In studies 2A and 2B, the pattern of findings of category involvement was inconsistent. In Study 2A, I only found a positive effect of category involvement on the choice likelihood of the non-dominant first-mover at the retaliation stage. In Study 2B, this pattern reversed. At the retaliation stage, category involvement had (a) no effect on the choice likelihood of the non-dominant first-mover and (b) a negative effect on the choice likelihood of the dominant first-mover. Given the inconsistent pattern of results, my dissertation does not offer any conclusive insights on the role of category involvement.

Contribution to literature on competitive advantage

My dissertation adds to our current understanding of sustained competitive advantage. Literature at the intersection of sustained competitive advantage and marketing suggests that brands, sales force and general marketing expertise can provide firms with sustained competitive advantage (Capron and Hulland 1999). More recently researchers have shown that a company’s market orientation can also be a source of sustained competitive advantage (Kumar, Jones, Venkatesan, and Leone 2011). However, market-based assets [that reside with consumers] and are extrinsic to the firm have traditionally been ignored as sources of sustained competitive advantage (Srivastava, Fahey, and Christensen 2001). Specifically, Srivastava et al. (2001) identified four specific resources (that reside with consumers) and argued for the need to
examine them as sources of sustained competitive advantage. The four resources they identified were (a) product attributes, (b) experiential benefits, (c) favorable customer attitudes and (d) network effects associated with firms and brands. My dissertation heeds this call by examining whether a differentiating brand’s first-mover association with an attribute leads to sustained competitive advantage for it.

The literature on sustained competitive advantage suggests that such advantage is derived from firm-specific resources that have the following properties: value, rarity, imperfect imitability, and substitutability (Barney 1991). My dissertation shows that sustained competitive advantage can be created even when the resource (that generates the competitive advantage) violates some of the necessary properties expected from it. Specifically, I demonstrate when sustained competitive advantage can be created by resources (i.e., trivial attributes) that are neither valuable nor rare.

An expected criticism of my claim that dominant brands can achieve sustained competitive advantage (by introducing trivial attributes) is that such competitive advantage does not hold when competition retaliates with a price cut.

I present three arguments against this criticism. First, my experiments were agnostic to the ability of first-movers to price cut. From a strategic perspective, if the first-mover is a dominant brand, it probably has deeper pockets (than retaliators) and can match the retaliator’s price-cut. And, if the first-mover is able to match the retaliator’s price cut, the first-mover should be able to hold on to the choice-share it gained with the trivial attribute. Second, past research suggests that non-dominant brands may hesitate retaliating with a price-cut (against a dominant brand) because they know that the dominant brand can match a price cut. Specifically, Putsis and Dhar (1998) empirically examined which type of (game theoretic) competitive interaction
cooperative, (b) non-cooperative, (c) independent (Nash), (d) leader-follower (Stackelberg) or (e) dominant-fringe firm] was most prevalent between dominant (national brands) and non-dominant (private-label) brands. They found that dominant (i.e. national) brand price leadership was the most common form of competitive interaction. In other words, in a majority of categories, dominant brands were more likely to set prices and non-dominant brands were more likely to follow the lead of dominant brands. Third, follow-up analysis in Study 3 shows that trivial attributes help salvage greater choice-share for dominant first-movers against price-cuts. Based on the arguments presented, a dominant first-mover’s ability to create needs (by launching trivial attributes) will quite likely hold despite occasional price-cuts by non-dominant retaliators.

Contribution to our understanding of differentiation

My dissertation also adds to our understanding of differentiation. As noted earlier, the conventional understanding of differentiation suggests that effective differentiation involves developing a unique position on attributes that are widely valued and considered important by buyers (Dickson and Ginter 1987; Porter 1985).

Carpenter, Glazer and Nakamoto (1994) and downstream research on trivial attribute differentiation challenges the conventional notion that differentiation can only be achieved by developing a unique position on important attributes that are valued.

However, any claims (thus far) regarding the effectiveness of trivial attribute differentiation could be easily disputed and criticized for two reasons. First, consumers would discount brands with trivial attributes once they learn (through product trial) that there is no observable benefit from trivial attributes. Second, competitors could easily replicate or introduce their own trivial attributes reversing any advantage trivial attributes provide. In sum, critics could argue that any advantage that trivial differentiation provides is transient and reversible. Such
non-durable characteristics of trivial differentiation may give the impression that it is a toothless tool that is unlikely to provide any strategic benefits to brands [compared to benefits yielded by conventional differentiation on important attributes]. My dissertation strengthens prior research on trivial attribute differentiation by demonstrating that under certain circumstances its impact is not reversible and hence sustainable. Therefore, trivial differentiation deserves a more thorough look as a strategic option by marketers who may have been skeptical regarding its durability.

**Contribution to literature on consumer choice**

My dissertation contributes to prior literature on the effect of response mode on consumer choice. A principle of rational decision theory is that preferences should not vary based on the type of method used to assess them provided the methods are strategically equivalent (Bettman, Luce, and Payne 1998; Tversky, Sattath, and Slovic 1988). However, research has demonstrated that the method of preference elicitation impacts consumer preferences. As an example, Okada (2005) demonstrated that consumers relative preferences for hedonic vs. utilitarian options varied depending on whether the alternatives were presented singly (i.e., evaluation mode) or jointly (choice mode). Similarly, Chitturi, Raghunathan, and Mahajan (2007) found asymmetries between choice and willingness-to-pay (evaluation) tasks. My dissertation adds to prior research in this area by showing the moderating effect of brand dominance on the mode of preference elicitation (evaluation vs. choice). Specifically, I show that while both dominant and non-dominant brands gain choice share when they introduce trivial attributes, only dominant brands gain evaluation.

Past research at the intersection of order of entry and consumer preference formation suggests that consumers rely on singular evaluative processing in first-mover contexts (where a brand is a pioneer in a nascent category) and comparative evaluation in the follower contexts.
I extend such literature by demonstrating evaluative processes in first-mover contexts where an established brand introduces new attributes in an existing category. My dissertation shows that both singular and comparative processes can operate in first-mover contexts and the type of processing is a function of whether people are choosing or evaluating.

15.2. Substantive contributions

Competitive implications for dominant brands

My findings suggest that dominant brands can gain sustainable competitive advantage by introducing trivial attributes. However, I recommend that a dominant brand should adopt a judicious approach before adopting a trivial attribute strategy. A trivial attribute strategy is fraught with risk as competition or consumer watchdogs could accuse the differentiating brand of deception and consequently the reputation of the dominant brand may be jeopardized (Burke et al. 1988). As an example, Dannon suffered much negative publicity when it had to settle lawsuits in both US and Canada for claiming that the probiotics in its DanActive drinks improved digestion and prevented colds (McMullen 2010; Taylor 2012).

I propose that a dominant brand should adopt a trivial attribute strategy only in rare circumstances. The use of trivial attributes seems justified when the perceived differentiation between the dominant brand and its competition is declining or when the dominant brand is being seen as stagnant in an over-crowded market (Aaker 2003). Such a situation warrants that the dominant brand launches a trivial attribute. Aaker (2003) argues that “differentiation is the engine of the brand train – if the engine stops so will the train”. He further argues that if a successful brand fails to maintain differentiation, consumers have no basis for choosing it over
others. Hence, it may be imperative for a dominant brand to adopt a trivial attribute strategy when it is perceived as being increasingly undifferentiated from other competing brands.

My second recommendation for dominant brands is to closely monitor the trivial attributes launched by non-dominant competing brands. If the trivial attribute strategy of a non-dominant brand gains traction in the market-place, a dominant brand needs to retaliate quickly with its own trivial attributes to recoup any market share that it lost to the non-dominant first-mover. A dominant brand (with deep pockets) may also consider launching a price-cut to stall any market share swings towards the non-dominant first-movers. The price-cut should however be used as an interim strategy until the dominant brand launches its own product-based trivial attributes.

Competitive implications for non-dominant brands

I recommend that non-dominant brands should embrace a first-mover trivial attribute strategy as the potential benefits outweigh the potential risks. As my findings show, a trivial attribute will significantly increase the non-dominant brand’s choice-share. This choice-share gain comes from both competing dominant and non-dominant brands. The choice-share a first-mover (non-dominant brand) gains from other non-dominant brands is likely to sustain. The choice-share the first-mover (non-dominant brand) gains from a dominant brand [although reversible] is nevertheless valuable. First, it ensures greater product trial amongst consumers that would not have otherwise considered trying the non-dominant brand without the trivial attribute. Second, a dominant brand may not react (soon) as it may be concerned of a possible reputational loss that it could suffer by adopting an attribute that provides no performance benefit. Third, a dominant brand may not price promote rapidly as it may discount the potential impact of the non-dominant brand’s trivial attribute. In these latter scenarios, the choice-share a non-dominant
first-mover gains at the cost of the dominant brand may also hold due to the inaction of the dominant brand. On the risk side of the equation, a non-dominant first-mover has little to lose, as it has relatively low choice share to begin with. Considering that the benefits outweigh the risk, I recommend that a non-dominant brand should adopt a trivial attribute strategy as a first-mover.

A retaliating non-dominant brand has the following options. If a non-dominant brand is retaliating to a dominant brand, it should introduce the same trivial attribute. This is important as the trivial attribute introduced by the dominant brand is evaluated more favorably and is likely to get assimilated in the schema. Such is evident in the shampoo category for instance where many brands (TreSemme, L’Oreal, Tigi, OGX etc.) launched vitamin based shampoos after Pantene made vitamins a part of the shampoo schema. If a non-dominant brand is retaliating to another non-dominant first-mover, the retaliating non-dominant brand should introduce a more attractive trivial attribute. A final option that a non-dominant brand can adopt is to cultivate media and PR and try to expose the fallacy of the first-mover’s trivial attribute differentiation claims.

Implications for consumer welfare

From a consumer welfare perspective, my dissertation has two implications. First, a segment of consumers may have naïve beliefs that all differentiation by dominant brands is valuable. The results of my research suggest that dominant brands are effective in differentiating on trivial attributes. Hence, consumers need to be cognizant that certain new attributes introduced by dominant brands may not provide any value. Second, consumers should carefully verify new product attribute claims that sound appealing (but are ambiguous on the actual benefit) in low-complexity product categories as trivial differentiation is more effective in such categories. Consumers may verify such claims by reviewing research (on such brands) from independent agencies such as Consumer Reports.
15.3. Limitations and future research

The first limitation of my dissertation was that consumer choice was limited to a maximum of three brands. This was done for two reasons. First, it ensured that my experimental operationalization was consistent with prior trivial attributes literature. Second, it allowed sufficient statistical power for analysis that involved examining choice data. Albeit, the challenge with the three brand choice set was that it did not capture the market reality completely as many product categories have multiple active brands. Hence, some of my respondents may have had brand preferences beyond the brands used in my manipulations. It will be interesting to examine whether the competitive dynamics of trivial attributes change depending on whether the first-mover or the retaliator is within the consumers’ consideration set or not. Such a study would involve experimentally manipulating first-movers and retaliators that are within (or outside) the respondents’ consideration set (Nedungadi 1990). A related question would be to experimentally tease apart the impact of category dominance from prior brand preference on the observed effects. Such research would examine whether first-mover preferred brands [that are non-dominant] provide similar sustainable competitive advantage as dominant brands provide. Similarly, teasing apart the role of dominance and equity in causing the reported effects will be valuable. In all product categories that I examined in my dissertation, dominance and equity correlated positively. Therefore, an examination of these hypotheses in a product category in which a non-dominant brand also enjoys high equity (e.g., Stella in beer against the dominant brand Budweiser) will further clarify the competing influence of dominance and equity on the effectiveness of trivial differentiation.

From a strategic perspective, non-dominant brands are not homogeneous. Some non-dominant brands adopt a me-too strategy while others aspire to be the would-be dominant brands
of the future (Dawar and Bagga 2015). An interesting avenue of research would be to examine whether trivial attribute competitive implications for non-dominant brands vary based on the nature of non-dominance.

A second short-coming of my dissertation is that I do not examine trivial attribute based competitive dynamics when both the first-mover and the retaliator are dominant brands. I decided to construct a choice-set with one dominant and two non-dominant brands as pretesting in most categories revealed that there was a clear category leader and multiple non-dominant followers. However, some categories have two dominant brands that compete neck to neck in the market-place (e.g., Coke and Pepsi in cola). Although, this scenario was omitted, a follow-up analysis in future research of such an action-reaction setting is potentially valuable. Another avenue of future research would be to examine whether there are any moderating conditions under which non-dominant brands can use trivial attributes for sustainable competitive advantage against dominant brands.

A third short-coming of my dissertation was that I analyzed retaliation involving only one important attribute (i.e., price). Price is a special attribute. First, it is non-product based. Second, it has an asymmetrically high impact on consumer choice. Based on the conjoint analysis I conducted in study 3, the aggregate price utility (62 over 100) across all participants was more than double the aggregate brand utility (30 over 100). Hence, it is an open question whether the advantage provided by trivial attributes would sustain against retaliation that involves (non-price based) important product attributes. As an example, would the advantage that Brazilian High Altitude Roasting provide to a first-mover coffee brand get washed away if the retaliator’s aroma rating is significantly improved? Examining retaliation types that involve product based important attributes would further my dissertation’s findings.
Prior research shows that different brand personality dimensions (sincerity, excitement, competence, sophistication and ruggedness) affect how consumers assess new product information (Aaker 1997). Hence, an important avenue of future research would be to examine the role of brand personality and positioning on the effectiveness of trivial attribute differentiation. To illustrate, if a brand is seen as a sincere brand that is focused on product features and R&D, then a trivial attribute may actually be seen as a real attribute.

Other avenues of future research include examining whether trivial attribute based competitive dynamics vary based on consumer and category level factors. Potentially interesting moderators at the consumer level include factors such as perceived knowledge of the category (Xu and Wyer 2010), and tolerance towards ambiguity (Batra and Sinha 2000). Additionally, an examination of consumer attributions that underlie the moderating role of category complexity is merited. It is possible that in high-complexity categories in which consumers are used to real innovation, the introduction of trivial features (that provide no verifiable benefits) may be perceived as an attempt to deceive consumers. In contrast, when a brand launches a trivial attribute in a low-complexity category, people may believe that the brand is investing in product research, and trying to make a real difference.

Potentially interesting moderators at the category level include the level of perceived purchase risk associated with the product category (Narasimhan and Wilcox 1998), and the degree of perceived quality variation among brands within a category (Batra and Sinha 2000). It is also possible that the experiential nature of the product category moderates the observed effects. Categories that offer objective and verifiable benefits may make the trivial attributes less likely to be successful. In contrast, categories that offer ambiguous benefits and where the decision is emotional may be the ones where trivial attributes are more likely to be successful.
To paraphrase Joseph Heller in Catch-22, among attributes that are trivial, there are attributes that are more trivial than the rest. In other words, not all trivial attributes may be effective. It will also be interesting to examine what makes certain trivial attributes more [or less] successful than other trivial attributes that are just as unimportant. As an example, prior research demonstrates that the nature of attributes (i.e., core or peripheral) impacts a brand’s ability to gain competitive advantage (Bagga, Noseworthy and Dawar 2015; Pechmann and Ratneshwar 1991). Therefore, follow-up research that examines whether the effectiveness of trivial attribute differentiation is moderated by the core or peripheral nature of trivial attributes is merited. Additionally, future researchers could explore if there are certain conditions under which trivial attributes are more likely to be construed as puffery and by consequence more likely to be ignored.

Finally, although the experimental nature of my methods ensures high internal validity, follow-up validation of my findings using brand level time-series scanner panel data [that capture trivial attribute based action-reaction events in the market-place] will be a valuable extension of my work.
Appendices

Appendix 1: Pilot Study Stimuli

<table>
<thead>
<tr>
<th></th>
<th>Folgers</th>
<th>Nescafé</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aroma rating</td>
<td>5.8</td>
<td>5.9</td>
</tr>
<tr>
<td>Freshness rating</td>
<td>5.4</td>
<td>5.3</td>
</tr>
<tr>
<td>Percentage of premium beans</td>
<td>85%</td>
<td>85%</td>
</tr>
<tr>
<td>Brazilian high altitude roasting process</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes:

- This choice set corresponds to the following treatment condition, *Differentiating brand – dominant (Folgers).*
- In the non-dominant differentiating brand condition, Nescafé had the trivial attribute.
- In the control condition, neither Nescafé nor Folgers had the trivial attribute.
### Appendix 2: Brand Awareness across Studies

<table>
<thead>
<tr>
<th>Study #</th>
<th>Dominant brand</th>
<th>Non-dominant Brand</th>
<th>Other non-dominant brand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Study</td>
<td>Folgers</td>
<td>Nescafé</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>90%</td>
<td></td>
</tr>
<tr>
<td>Study 1A</td>
<td>Pantene</td>
<td>Finesse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>98%</td>
<td>89%</td>
<td></td>
</tr>
<tr>
<td>Study 1B</td>
<td>Canon</td>
<td>Panasonic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>93%</td>
<td></td>
</tr>
<tr>
<td>Study 2A</td>
<td>Folgers</td>
<td>Melitta</td>
<td>Eight O’Clock</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>74%</td>
<td>71%</td>
</tr>
<tr>
<td>Study 2B</td>
<td>Tide</td>
<td>OxiClean</td>
<td>Arm &amp; Hammer</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>96%</td>
<td>98%</td>
</tr>
<tr>
<td>Study 3</td>
<td>Tropicana</td>
<td>Oasis</td>
<td>Simply</td>
</tr>
<tr>
<td></td>
<td>95%</td>
<td>83%</td>
<td>81%</td>
</tr>
</tbody>
</table>
Note: In the non-dominant condition, Pantene was replaced by Finesse.
Appendix 4: Study 1A – Camera Stimuli

Note: In the non-dominant condition, Canon was replaced by Panasonic.
Appendix 5: Study 1B – Shampoo Stimuli

Condition:
Pantene differentiates

Condition:
Finesse differentiates

Condition:
Control

Note: The brands and the Ads were counter-balanced.
Appendix 6: Study 1B – Camera Stimuli

Condition: Canon differentiates
Canon Digital SLR camera with Magnetic Dial Navigator …freezes all moments for posterity

Panasonic Digital SLR camera with Improved Technology …captures all shades of nature

Condition: Panasonic differentiates
Panasonic Digital SLR camera with Magnetic Dial Navigator …freezes all moments for posterity

Canon Digital SLR camera with Improved Technology …captures all shades of nature

Condition: Control
Canon Digital SLR camera with Superior Engineering …freezes all moments for posterity

Panasonic Digital SLR camera with Improved Technology …captures all shades of nature

Note: The brands and the Ads were counter-balanced.
Appendix 7: Study 2A – Stimulus Choice Set

<table>
<thead>
<tr>
<th>Product Features</th>
<th>Melitta</th>
<th>Folgers</th>
<th>Eight O’Clock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aroma Rating</td>
<td>5.2</td>
<td>5.3</td>
<td>5.2</td>
</tr>
<tr>
<td>Freshness Rating</td>
<td>5.5</td>
<td>5.4</td>
<td>5.4</td>
</tr>
<tr>
<td>Taste Rating</td>
<td>5.6</td>
<td>5.6</td>
<td>5.7</td>
</tr>
<tr>
<td>Roasting Process</td>
<td>Brazilian High Altitude</td>
<td>Regular</td>
<td>Regular</td>
</tr>
<tr>
<td>Polishing Process</td>
<td>Regular</td>
<td>Regular</td>
<td>Patented Caribbean</td>
</tr>
</tbody>
</table>

Note: This choice set corresponds to the following treatment condition:

- First-mover: Non-dominant brand (Melitta) introduces trivial attribute *Brazilian High Altitude Roasting*
- Retaliating brand: Another non-dominant brand (Eight O’Clock)
- Retaliation type: A different (equally) trivial attribute: *Patented Caribbean Polishing*
Appendix 8: Study 2B – Stimulus Choice Set

<table>
<thead>
<tr>
<th>Product Features</th>
<th>OxiClean</th>
<th>Tide</th>
<th>Arm &amp; Hammer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning Rating</td>
<td>5.2</td>
<td>5.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Extract</td>
<td>Yucca Filamentosa</td>
<td>Regular</td>
<td>Yucca Filamentosa with IE crystals</td>
</tr>
</tbody>
</table>

Note: This choice set corresponds to the following treatment condition:

- First-mover: Non-dominant brand (OxiClean) introduces trivial attribute *Yucca Filamentosa extract*
- Retaliating brand: Another non-dominant brand (Arm & Hammer)
- Retaliation type: A more attractive trivial attribute: *Yucca Filamentosa with IE crystals*
## Appendix 9: Study 2C – Stimulus Choice Set

### Mixed-Trivial matrix

<table>
<thead>
<tr>
<th></th>
<th>Simply Orange</th>
<th>Tropicana</th>
<th>OASIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition Rating</td>
<td>5.2</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Taste Rating</td>
<td>5.1</td>
<td>5.2</td>
<td>5.1</td>
</tr>
<tr>
<td>FreshnessRating</td>
<td>5.1</td>
<td>5.1</td>
<td>5.2</td>
</tr>
<tr>
<td>Extraction Process</td>
<td>Regular</td>
<td>Regular</td>
<td>Patented Florida</td>
</tr>
</tbody>
</table>

### Mixed-Non-trivial matrix

<table>
<thead>
<tr>
<th></th>
<th>Simply Orange</th>
<th>Tropicana</th>
<th>OASIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition Rating</td>
<td>5.2</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Taste Rating</td>
<td>5.1</td>
<td>5.2</td>
<td>5.1</td>
</tr>
<tr>
<td>Freshness Rating</td>
<td>5.1</td>
<td>5.1</td>
<td>5.2</td>
</tr>
<tr>
<td>Extraction Process</td>
<td>Patented Florida</td>
<td>Patented Florida</td>
<td>Patented Florida</td>
</tr>
</tbody>
</table>

### Brand-only matrix

<table>
<thead>
<tr>
<th></th>
<th>Simply Orange</th>
<th>Tropicana</th>
<th>OASIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition Rating</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Taste Rating</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Freshness Rating</td>
<td>5.2</td>
<td>5.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Extraction Process</td>
<td>Patented Florida</td>
<td>Patented Florida</td>
<td>Patented Florida</td>
</tr>
</tbody>
</table>

### Trivial-only matrix

<table>
<thead>
<tr>
<th></th>
<th>SOLEVITA</th>
<th>SUNITO</th>
<th>SONERA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition Rating</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Taste Rating</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Freshness Rating</td>
<td>5.2</td>
<td>5.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Extraction Process</td>
<td>Regular</td>
<td>Regular</td>
<td>Patented Florida</td>
</tr>
</tbody>
</table>
Note: This choice set corresponds to the following treatment condition:

- First-mover: Dominant brand (Tropicana) introduces trivial attribute *Patented Florida Extraction Process*
- Retaliating brand: Non-dominant brand (Oasis) launches a price cut
- Retaliator’s past promoter status: Rare Price Promoter
# Appendix 11: Details of Measures

<table>
<thead>
<tr>
<th></th>
<th>Pretest Brand typicality Measure (Loken and Ward 1990)</th>
<th>On a scale of 1 - 7, please indicate how good an example is the Folgers brand of the ground coffee category. (1 means that that Folgers brand represents the ground coffee category very poorly. 7 means that Folgers is a very good example of the ground coffee category.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&lt;1&gt;……. &lt;7&gt;</td>
</tr>
</tbody>
</table>
|   | Pretest Brand awareness measure                     | Are you aware of the ABC brand of XYZ product category?  
  - Yes  
  - No                                                                                                                                                                                                                                                                   |
|   |                                                     | (Brands and categories were adapted to specific studies).                                                                                                                                                                                                         |
|   | Pretest Attribute importance (Brown and Carpenter 2000) | You will find below a list of product features (attributes) in the XYZ product category. On a scale of 1 to 7, please rate how important are these product features to your XYZ purchase decision.  
  <Not at all important 1>……. <Very important 7>                                                                                                                                                            |
|   |                                                     | Applicable Studies: All                                                                                                                                                                                                                                           |
|   | Pretest Category complexity Measure (Mukherjee and Hoyer 2001) | Please rate the following product categories below on three specific statements. Each of the three statements checks your perception regarding the complexity of the product category.                                                                                     
  **Product category XYZ:**  
  - < Easy to use 1>……. <Difficult to use 7>  
  - < Low complexity product 1>……. <High complexity product 7>  
  - < Has few number of product features 1>……. < Has large number of product features 7>                                                                                                                                 |
|   |                                                     | Applicable Studies: 1A and 1B                                                                                                                                                                                                                                  |
| 5 | Pretest Brand dominance: Measure 1 (Herr, Farquhar and Fazio 1996) | The pretest measured the category dominance of multiple category brands using a time latency measure that calculated the average time taken to correctly identify whether a brand belonged to a particular category. The order of the brands was randomized. 

In the product category of XYZ, is a product sold by the ABC brand? 
- Yes 
- No  

Applicable Studies: 1A,1B, 2A,2B,2C,3 |
|---|---|---|
| 6 | Pretest Brand dominance: Measure 2 (Ferraro, Bettman and Chartrand 2009) | How commonly is the brand ABC used in category XYZ? 
- Not used by many consumers 1>........ <Used by most consumers 7>  

Applicable Studies: 1A,1B, 2A,2B,2C,3 |
| 7 | Pretest Attractiveness of advertisements (Chattopadhyay and Basu 1990) | On the scale below, please rate how attractive do you find the advertisement below. 
- Unpleasant 1>........ <Pleasant 7> 
- Unlikable 1>........ <Likable 7> 
- Uninteresting 1>........ <Interesting 7> 
- Irritating 1>........ <Not irritating 7>  

Applicable Studies: 1A and 1B |
| 8 | Pretest Price promotion and trivial attribute equivalence | Imagine, that you decide to purchase orange juice. There are two hypothetical brands X and Y that are available. Both brands retail at $28 for a pack of 24 (ten ounce bottles). Brand X has introduced a new product feature called the Patented Florida Extraction Process. 

Consider that Brand Y is willing to reduce price so that it becomes more appealing compared to Brand X. At what price (below $28) of Brand Y will you become indifferent between purchasing Brand X and Brand Y? In other words, at what price of Brand Y, do the two brands become equally attractive to you?  

Applicable Studies: 3 |
<table>
<thead>
<tr>
<th>Page</th>
<th>Main study</th>
<th>Choice measure (Broniarczyk and Gershoff 2003)</th>
<th>Which of the two brands are you likely to choose?</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>• Folgers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Nescafé</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[Brands and categories were adapted based on the study].</td>
</tr>
<tr>
<td></td>
<td>Applicable Studies: All</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Page</th>
<th>Main study</th>
<th>Evaluation measure 1 (Carpenter, Glazer and Nakamoto 1994)</th>
<th>How will you evaluate the following brand offerings? Please use the slider scales below.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
<td></td>
<td>Folgers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nescafé</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[Brands and categories were adapted based on the study].</td>
</tr>
<tr>
<td></td>
<td>Applicable Studies: Pilot, 2A, 2B, 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Page</th>
<th>Main study</th>
<th>Evaluation measure 2 (Chattopadhyay and Basu 1990)</th>
<th>Please rate your opinion regarding the Pantene shampoo brand on the scales below:</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td></td>
<td></td>
<td>&lt; Bad 1&gt;......... &lt;Good 7&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; Dislike 1&gt;........ &lt;Like 7&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; Not nice 1&gt;........ &lt;Nice 7&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; Not preferred 1&gt;........ &lt;Preferred 7&gt;</td>
</tr>
<tr>
<td></td>
<td>Applicable Studies: 1A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Page</th>
<th>Main study</th>
<th>Category involvement</th>
<th>Please rate your level of agreement with the statements below regarding the XYZ product category:</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>• I rate the decision to buy XYZ as important.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Generally, I am interested in different XYZ products.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• I am familiar with the XYZ brands available in the market.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; Strongly disagree 1&gt;........ &lt;Strongly agree 7&gt;</td>
</tr>
<tr>
<td></td>
<td>Applicable Studies: 1A, 1B, 2A, 2B, 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Categories were adapted based on the study].
<table>
<thead>
<tr>
<th>Page</th>
<th>Main study</th>
<th>Thought protocol (elicitation)</th>
<th>Applicable Studies: 2A, 2B, 3</th>
</tr>
</thead>
</table>
| 13   | Please specify the reason(s) behind your brand choice.  
It is important that you mention the criteria you used.  
The reasons you specify will help us better understand the factors involved in consumers making brand choices. |
|      |            |                                |                               |
| 14   | Please state your familiarity and liking for the following brands:  
**Brand: XYZ**  
(Not familiar: 1) (Familiar: 7)  
(Dislike: 1) (Like: 7) |
|      |            |                                |                               |
Appendix 12: Representative Thought protocols

### Study 2A

<table>
<thead>
<tr>
<th>Choice strategy</th>
<th>Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand based</td>
<td>“...I love Folgers and it would take more than a graph to change my mind...”</td>
</tr>
<tr>
<td>Lexicographic</td>
<td>“...I based it off aroma reading...”</td>
</tr>
<tr>
<td>Trivial attribute based</td>
<td>“...The High Altitude Roasting WINS!!!...”</td>
</tr>
<tr>
<td>Relative trivial attribute</td>
<td>“…High Altitude Roasting sounds intriguing. Polishing sounds like something you do to furniture. Not appealing…”</td>
</tr>
<tr>
<td>processing</td>
<td></td>
</tr>
</tbody>
</table>

### Study 3

<table>
<thead>
<tr>
<th>Choice strategy</th>
<th>Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand based</td>
<td>“...Tropicana is a brand I am most familiar with; therefore it's my first choice...”</td>
</tr>
<tr>
<td>Trivial attribute based</td>
<td>“…Both the Oasis and Simply Orange uses regular extraction process while Tropicana uses patented Florida extraction process...”</td>
</tr>
<tr>
<td>Price based</td>
<td>“…the price of oasis is $4 cheaper than the other two brands…”</td>
</tr>
<tr>
<td>Joint brand-price</td>
<td>“…Tropicana is already the brand I like best, but the price cut definitely makes you want to buy it more...”</td>
</tr>
<tr>
<td>Price versus trivial attribute</td>
<td>“…It still has the extraction method that the other two do not have, the price change was not enough to make me choose the Simply Orange but it still made it more appealing ...”</td>
</tr>
</tbody>
</table>
References


Fishbein, Martin, and Icek Ajzen (1975), *Belief, attitude, intention and behavior: An introduction to theory and research*.


## Ethics Approval Notice

**Use of Human Participants - Initial Ethics Approval Notice**

**Principal Investigator:** Prof. Ninaj Dauer  
**File Number:** 16/4563  
**Review Level:** Delegated  
**Protocol Title:** Sustainability of Trivial Attribute Differentiation  
**Department & Institution:** Richard Ivey School of Business Ivey School of Business, Western University  
**Sponsor:** Ivey Research Fund

**Ethics Approval Date:** December 03, 2013  
**Expiry Date:** November 01, 2015

### Documents Reviewed & Approved & Documents Received for Information:

<table>
<thead>
<tr>
<th>Document Name</th>
<th>Comments</th>
<th>Version Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruments</td>
<td>Study 2</td>
<td></td>
</tr>
<tr>
<td>Instruments</td>
<td>Study 1</td>
<td></td>
</tr>
<tr>
<td>Instruments</td>
<td>Study 3</td>
<td></td>
</tr>
<tr>
<td>Western University Protocol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertisement</td>
<td>Recruitment Poster - Paid participant pool</td>
<td></td>
</tr>
<tr>
<td>Revised Letter of Information &amp; Consent</td>
<td>Revised Letter of Information and Consent Form (Western Template)</td>
<td></td>
</tr>
<tr>
<td>Response to Board Recommendations</td>
<td>Response to Ethics Recommendations</td>
<td></td>
</tr>
</tbody>
</table>

This is to notify you that The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the applicable laws and regulations of Ontario has granted approval to the above named research study on the approval date noted above.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the NMREB’s periodic requests for surveillance and monitoring information.

Members of the NMREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussions related to, nor vote on, such studies when they are presented to the NMREB.

The Chair of the NMREB is Dr. Riley Hinson. The NMREB is registered with the U.S. Department of Health & Human Services (HHS) institution number IRB 00000541.

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**Ethics Officer to Contact for Further Information**

- **Shane Kelly**  
  (shane.kelly@wso.ca)
- **Vikki Tom**  
  (vikki.tom@wso.ca)
- **Mina Mkhail**  
  (minamkhail@wso.ca)
- **Erika Baso**  
  (erika.baso@wso.ca)

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Curriculum Vitae

Name: Charan K Bagga

Post-secondary Education and Degrees:
G.B. Pant University Pantnagar, India
1996-2000 B. Technology

Indian Institute of Management Bangalore, India
2002-2004 MBA

Ivey Business School, Western University London, Ontario, Canada
2010-2015 Ph.D.

Honours and Awards:
AMA Consortium Doctoral Fellow 2014
Ivey Plan of Excellence Doctoral Fellowship, 2010 to 2014

Related Work Experience:
Marketing Lecturer, Western University
2012, 2015

Senior Manager, CSC (www.csc.com)
Cleveland, USA
2005 to 2010

Publications:
